ÖLEVIA

Service Manual

For LCD TV

(2004.2)

Table of Contents

1. Introduction

1.0 Preface

This service manual aims directly at the module of LCD TV. It offers the simple repair which emphasizes on technique explanation and production troubles to remove for the engineers and technicians who have electronic background.

1.1 Caution

Be sure to read those manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Prokia LCD TV. Be sure to read cautionary items described in the manual to maintain safety before servicing.

1.2 Warning

1. Remember to unplug the AC cord from the AC outlet before cleaning the product. And do not use liquid cleaners or aerosol cleaners to clean the display.
2. Do not place the product on an unstable place. It can cause the product to fall, resulting in serious personal injuries as well as damage to the product.
3. In case the product needs replacement parts, make sure that the service person uses replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. Use of unauthorized parts can result in fire, electric shock and/or other danger.
4. Do not overload AC outlets or extension cords. It can cause fire or electric shock.
5. The AC cords must be routed properly to prevent people from stepping on them or objects from resting on them. Check the cords at the plugs and product.
6. Do not hit the panel. Be careful to prevent from getting hurt by broken glass pieces in case the panel breaks.
7. Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products.
8. Do not place the display near water. Like bathtub, washbasin, kitchen sink and laundry tub, swimming pool and in a wet basement.

2. System Block Diagram

2.0 System Block Diagram (ME)

LCD TV COMPLETE SET+PACKING

PACKING | LCD TV COMPLETE SET | ACCESSORIES

STAND MODULE ASSY | FRONT COVER ASSY | KEYPAD MODULE ASSY | SYSTEM ASSY | POWER MODULE ASSY | SYS PCBA ASSY | SPEAKER MODULE ASSY

TUNER MODULE

AV MODULE

SPEAKER STAND
OPTION

WALL MOUNT
OPTIN
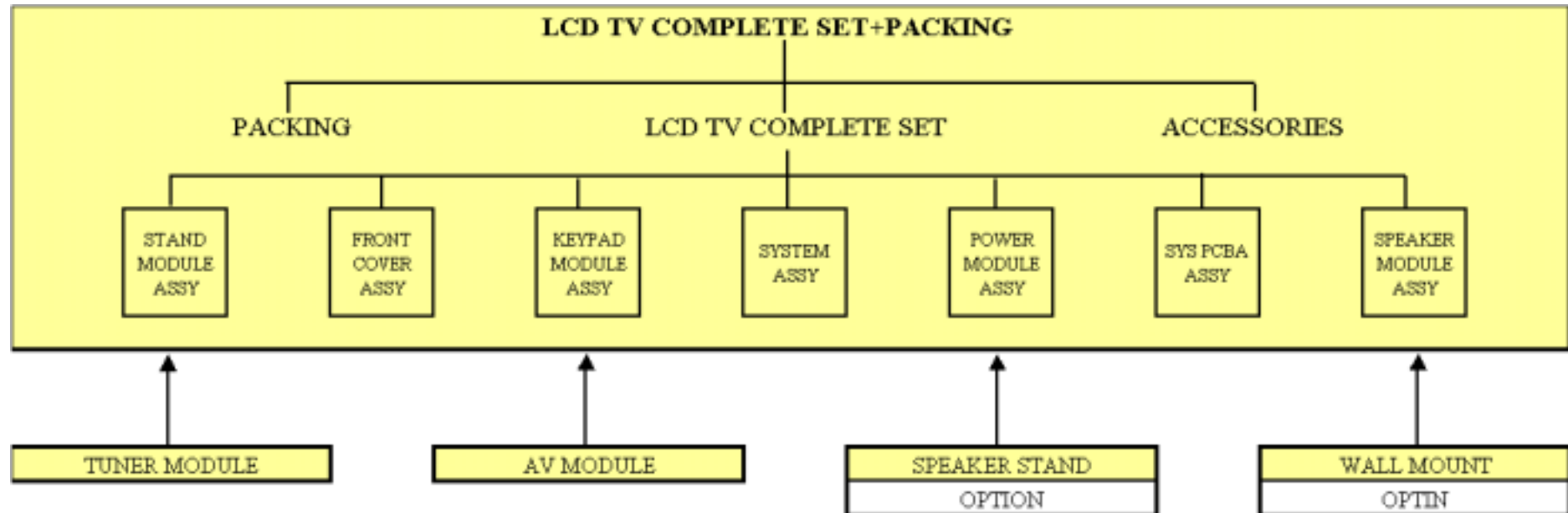
2.1 System Block Diagram (EE)
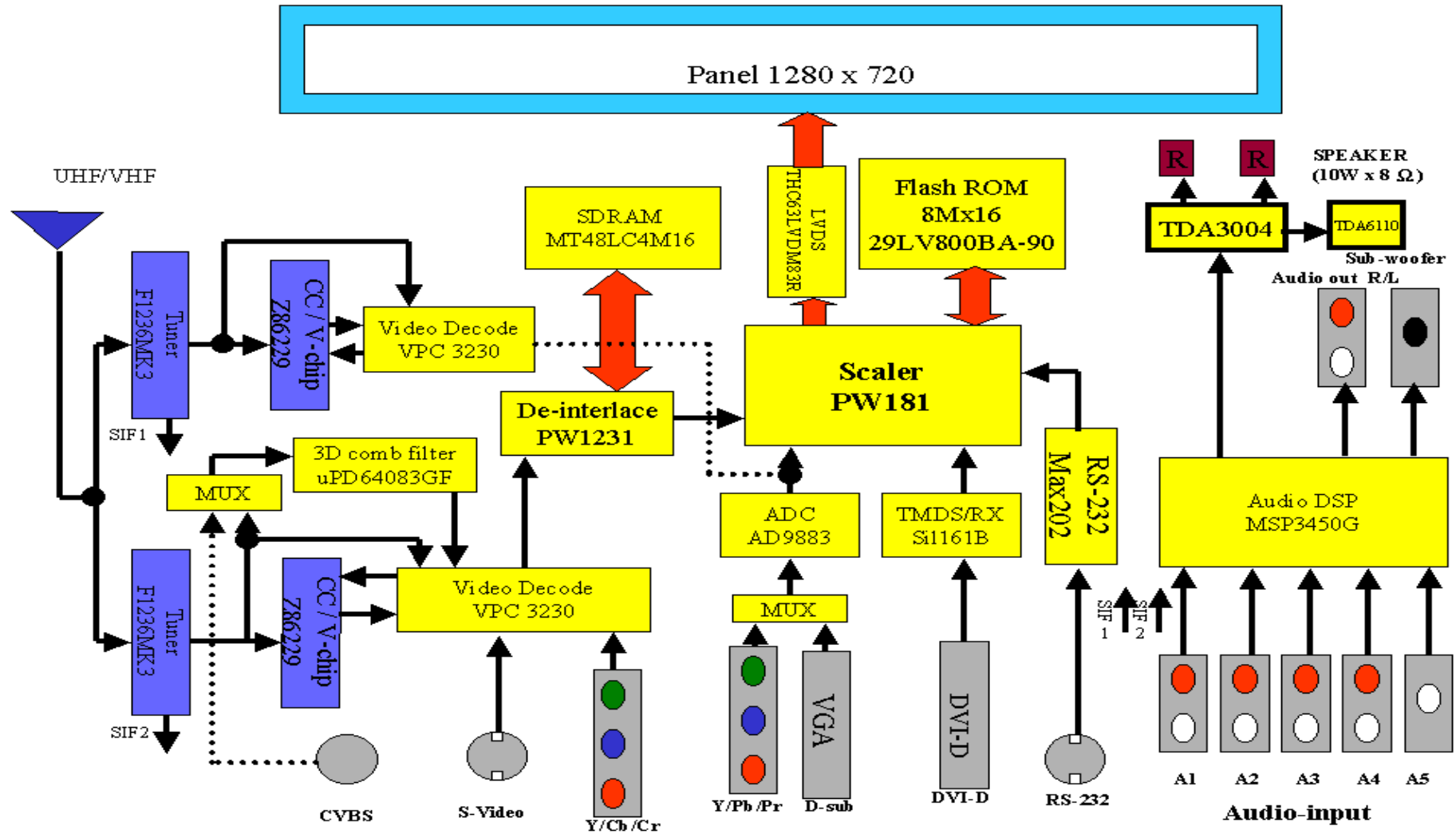
2.2 Connector Connection Diagram
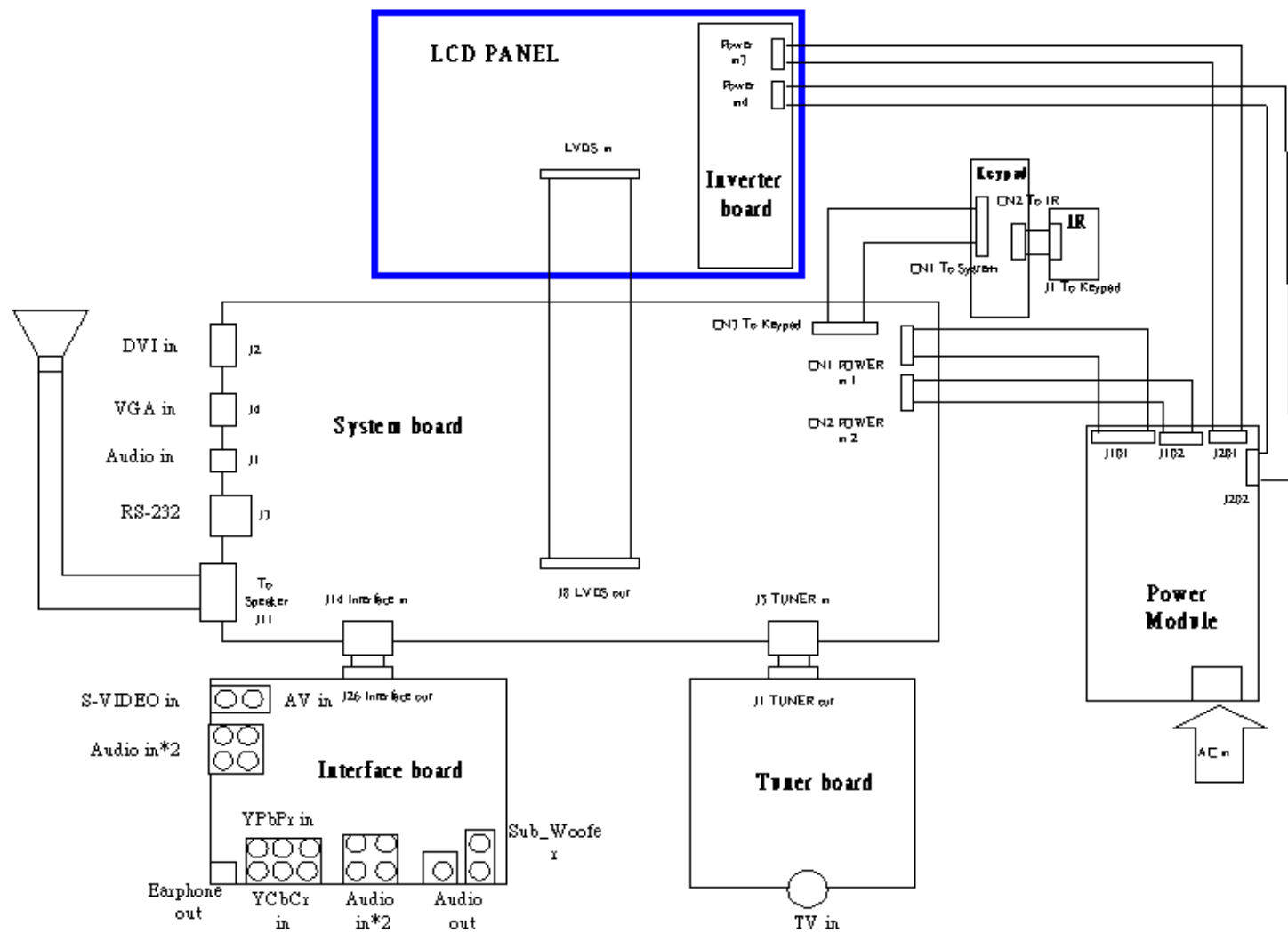
2.3 Spare Parts List

2.3.1 EE parts list

1. System Board for 27inch & 30inch
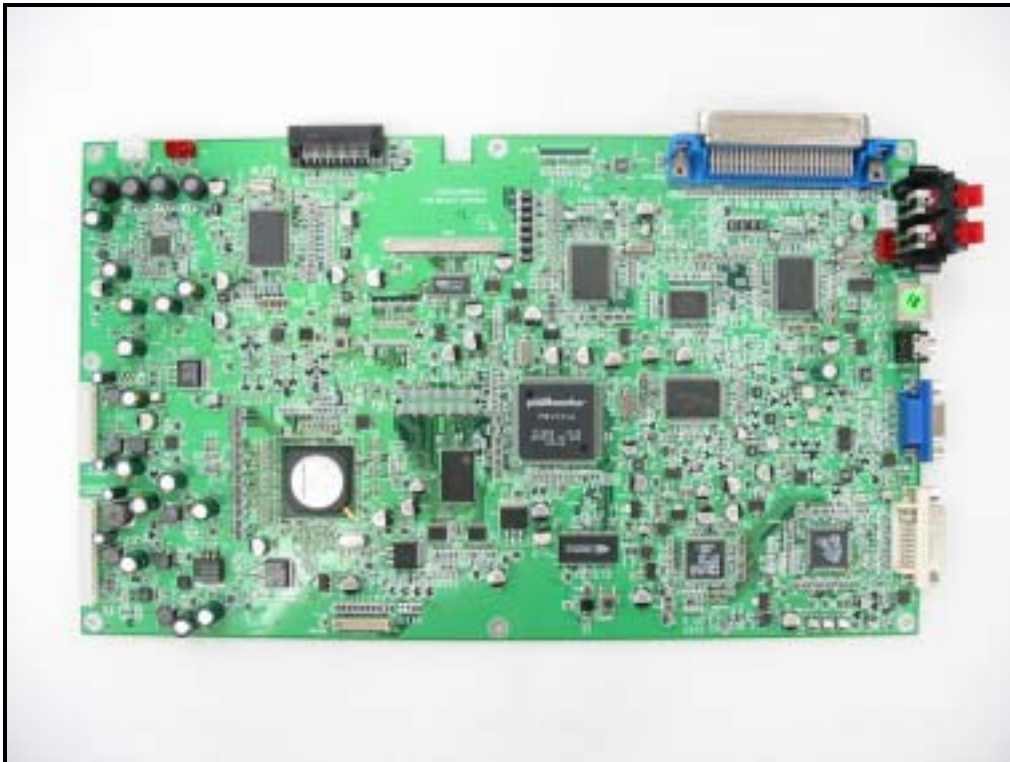
P/N P061P3112011 for 27   P061P3112010 for 30

2. P311 Interface Module Assy

P/N P70403820000

3. P311 Tuner Module Assy

P/N   P70403830000

4. PCBA Keypad
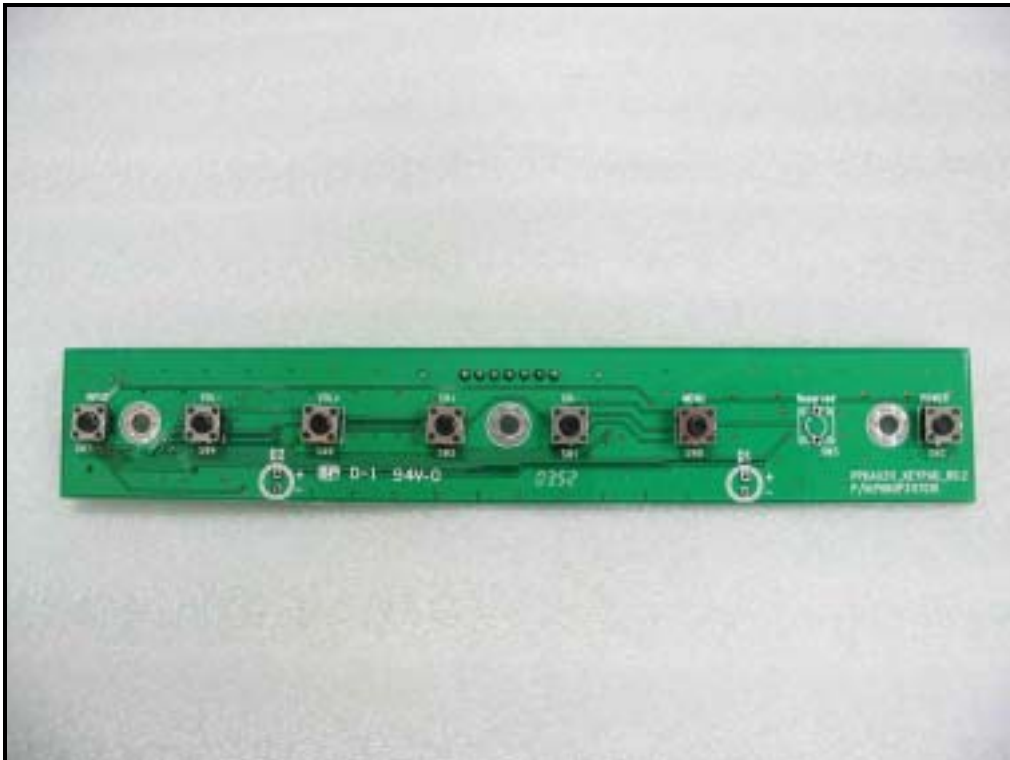
P/N   P061P3117010

5. IR board
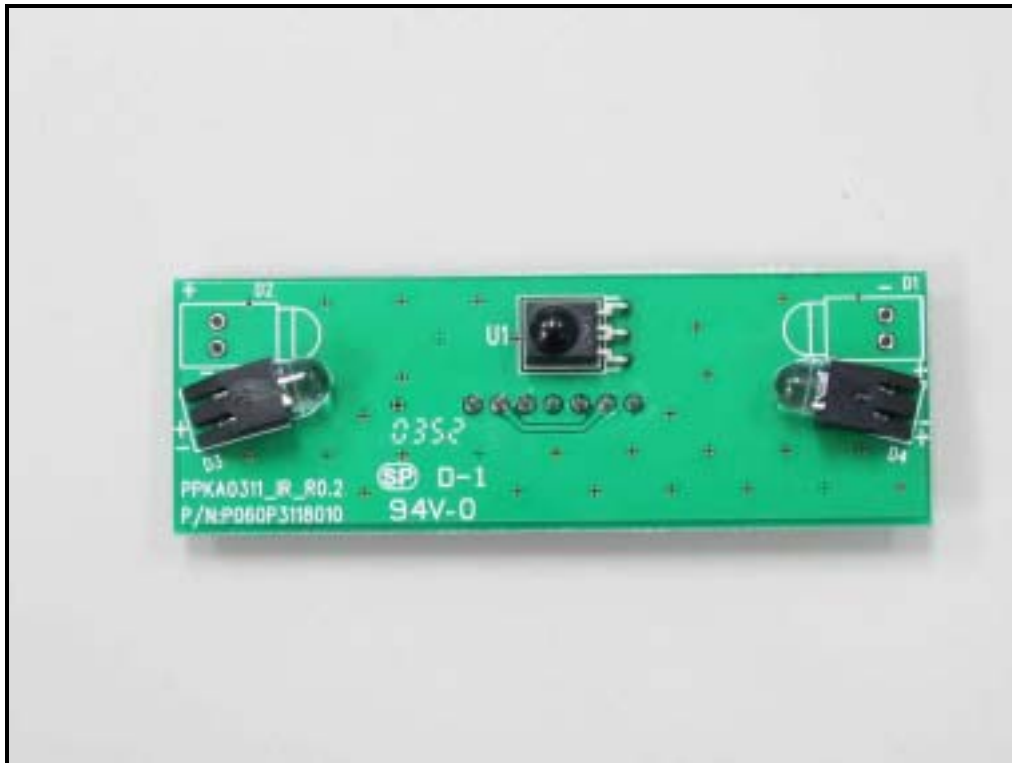
P/N   P061P3118010

6. Power Supply

P/N   P16000100000

7. LCD Panel
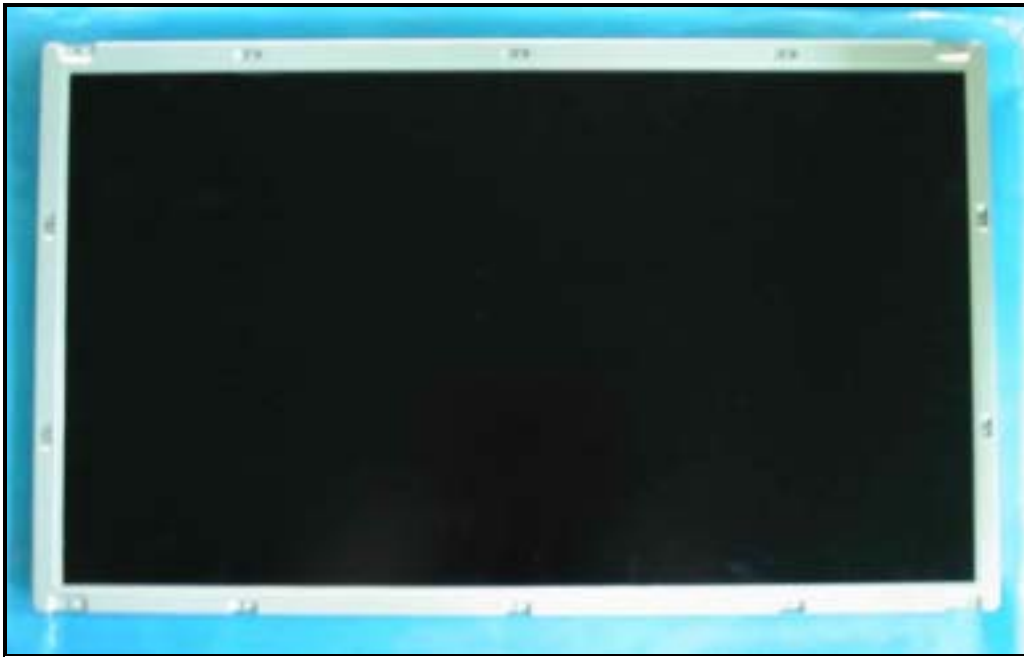
P/N P49000620000 for 27   P49000610000 for 30

8. System to Panel

P/N P10W53000001

9. System to Speaker

P/N P10W50600001

10. System to Keypad

P/N P10W51500002

11. Power to Inverter

P/N　P10W6220C001

12. System to Power

P/N　P10W6260C001

2.3.2 ME parts list

1. AV Cover Module Assy

P/N   P76000800000

2. Interface Cover

P/N   P60002040000

3. Conn fix Cover Module Assy

P/N   P76000800000

4. Foot Base Bottom

P/N   P60001981000

5. Foot Base Up

P/N P60001980000

6. Al Vertical Support

P/N P21001320000

7. Foot Base Metal

P/N P21001300000

8. Plastic Foot (GL-6)

P/N P60001880000

9. Keypad Assembly LCD TV

P/N   P76000790000

10. Speaker Module Assy

P/N   P76000750000

11. Speaker Foot Module Assy

P/N   P76000760000

12. Power Shielding Up
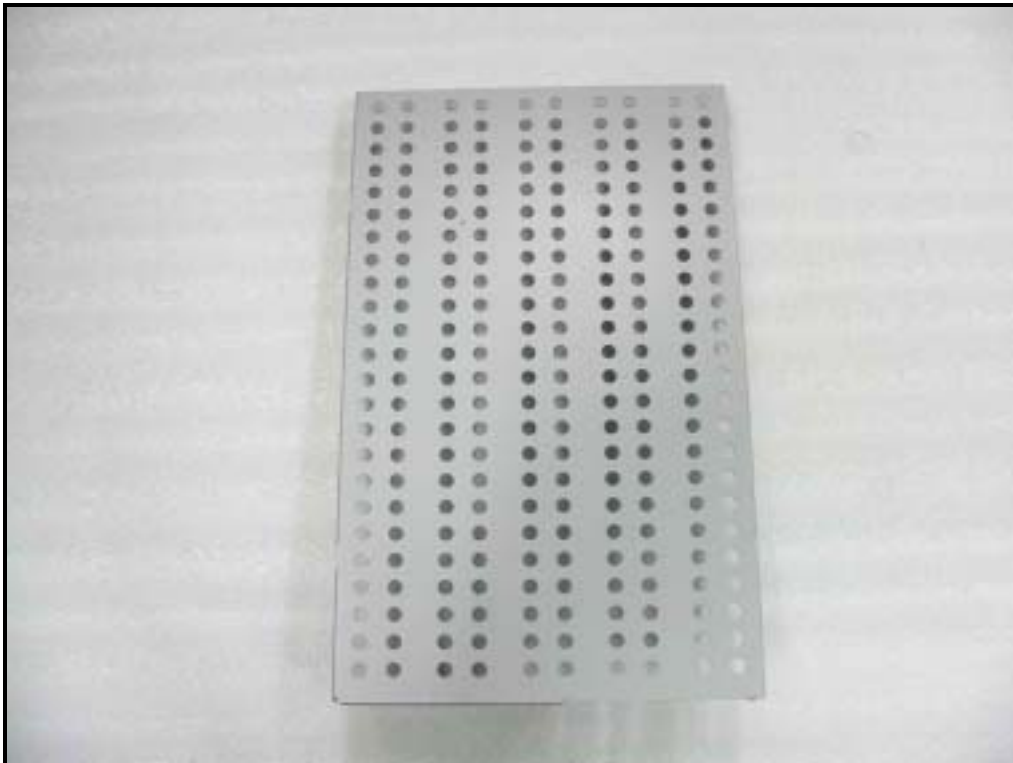
P/N   P21001360000

13. PCB-Support

P/N   P21001390000

14. PCB Support Metal
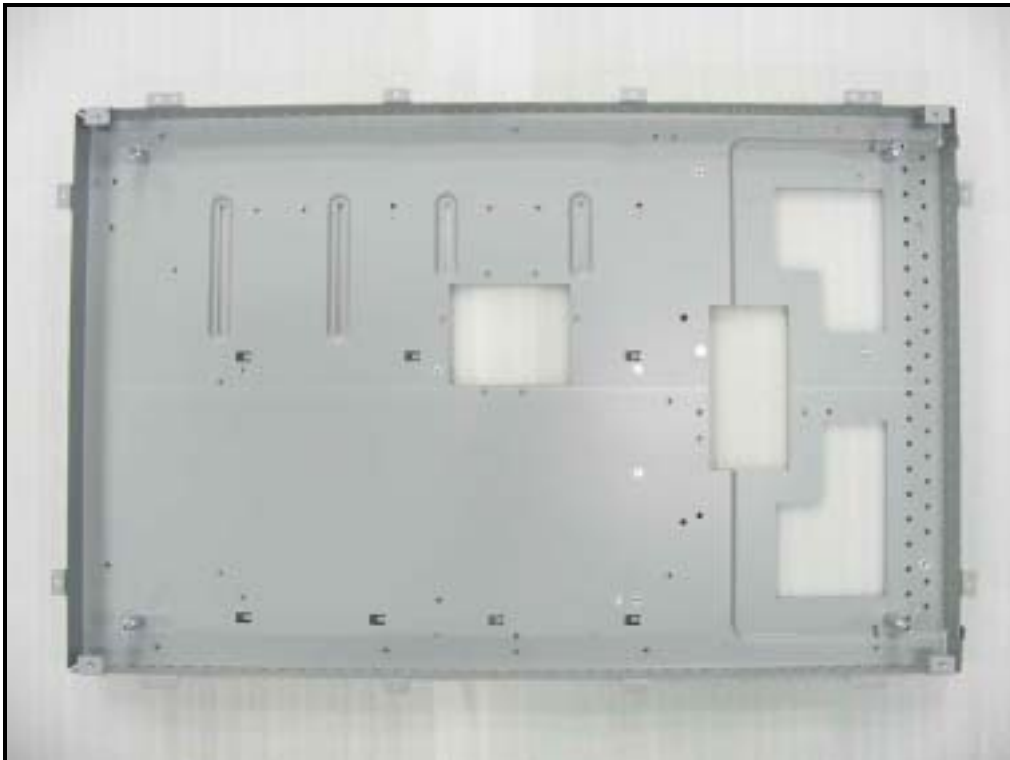
P/N   P21001380000 for 27   P21001390000 for 30

15. System PCB Shielding

P/N   P21001370000

16. Back Cover

P/N   P60001890000

17. P311 27-Front Cover Assy

P/N P70403850000

18. P311 30-Front Cover Assy

P/N P70403860000

19. Remote Control

P/N   P16000410000

2.4 Connector Pin Definition

SYSTEM BOARD

Function: VGA signal port

Connector type:

Specification: CNNT-HD D Sub-H-F-3Row-15pin-Dip-BLU

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	VGAR	I	75 ohm termination, 0.7Vp-p red signal
2	VGAG	I	75 ohm termination, 0.7Vp-p green signal
3	VGAB	I	75 ohm termination, 0.7Vp-p blue signal
4	GND	-	GND -
5	NC	-	No connection
6	GND	-	GND
7	GND	-	GND
8	GND	-	GND
9	VGA5V	I	VCC 5V IN
10	GND	-	GND
11	GND	-	-
12	VGASDA	I/O	I2C data bus for Reading DDC data
13	VGA_HS	I	Horizontal Frequency
14	VGA_VS	I	Vertical Frequency
15	VGASCL	I	I2C clock bus for Reading DDC data

Function: DVI signal port

Connector type:

Specification: CNNT-DVI-H-29PIN-1.9mm-1.5A-WHITE-dip

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	RX2m	I	TMDS LVDS input signal
2	RX2p	I	TMDS LVDS input signal
3	GND	-	GND
4	NC	-	No connection
5	NC	-	No connection
6	DDC_CLK	I	I2C clock bus for Reading DDC data
7	DDC_DATA	I/O	I2C data bus for Reading DDC data

8	NC	-	No connection
9	RX1m	I	TMDS LVDS input signal
10	RX1p	I	TMDS LVDS input signal
11	GND	-	GND
12	NC	-	No connection
13	NC	-	No connection
14	GDC5V		VCC 5V
15	GND		GND
16	HOTPLG		VCC 5V
17	RX0m		TMDS LVDS input signal
18	RX0p		TMDS LVDS input signal
19	GND		GND
20	NC	-	No connection
21	NC	-	No connection
22	GND		GND
23	RXCp		TMDS LVDS input clock
24	RXCm		TMDS LVDS input clock
25	NC	-	No connection
26	NC	-	No connection
27	NC	-	No connection
28	NC	-	No connection
29	AGND	-	GND
30	AGND	-	GND

Function: PC Audio In

Connector type:

Specification: CNNT-EAR Phone Jack-H-F-5pin-3.6   -Dip

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	AUD_R	I	Audio In_R
2	GND	-	GND
3	GND	-	GND
4	AUD_L	I	Audio In_L
5	GND	-	GND

Function: RS-232 port

Connector type:

Specification: CNNT-Mini Din-H-F-   pin-12   -Dip

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	NC	-	No connection
2	NC	-	No connection
3	GND	-	GND
4	NC	-	No connection
5	NC	-	No connection
6	NC	-	No connection
7	PC_TXD	I/O	RS-232 protocl
8	PC_RXD	I/O	RS-232 protocl
9	GND	-	GND
10	GND	-	GND
11	GND	-	GND

Function: Audio Out

Connector type: Push Terminal

Specification: CNNT-PUSH TERMINAL-F DIP RIGHT ANGLE-4 PIN-5mm

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	Speaker/PR	O	Audio Out_R
2	Speaker/PL	O	Audio Out_L
3	GND	-	GND
4	GND	-	GND

Function: Interface In

Connector type:

Specification: CNNT-CENTRONIC DIP RIGHT ANGLE-M-50 pin-2.16 mm

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	IF_EN	I	Connection test
2	AV9_MUX		

3	V5_IF		VCC 5V
4	GND	-	GND
5	GND	-	GND
6	OCVBS_SC1	O	AV Out1
7	RIN_SC1	I	SCART RGB_R IN
8	GIN_SC1	I	SCART RGB_G IN
9	BIN_SC1	I	SCART RGB_B IN
10	GND	-	GND
11	HD_Y	I	HDTV_Y IN
12	HD_PB	I	HDTV_PB IN
13	HD_PR	I	HDTV_PR IN
14	GND	-	GND
15	GND	-	GND
16	ALO_SC2	O	Audio Out_L SCART2
17	ARO_SC2	O	Audio Out_R SCART2
18	ALO_SC1	O	Audio Out_L SCART1
19	ARO_SC1	O	Audio Out_R SCART1
20	GND	-	GND
21	YCBCR_L	I	Audio In_L YCBCR
22	YCBCR_R	I	Audio In_R YCBCR
23	HDTV_L	I	Audio In_L HDTV
24	HDTV_R	I	Audio In_R HDTV
25	GND		GND
26	GND		GND
27	CVBS_SC1	I	AV IN
28	IF_YCVBS	I	S-VIDEO_Y IN
29	IF_C	I	S-VIDEO_C IN
30	GND	-	GND
31	OCVBS_SC2	O	AV Out2
32	IF_VCR	I	YCBCR_CR IN
33	IF_VCB	I	YCBCR_CB IN
34	IF_VY	I	YCBCR_Y IN
35	GND	-	GND
36	SCL_5V	I	I2C clock bus for selecting scart connectors
37	SDA_5V	I/O	I2C data bus for selecting scart connectors
38	TPA_MODE	O	EARPHONE TEST
39	GND	-	GND
40	EPOUT_L	O	EARPHONE Out_L

41	EPOUT_R	O	EARPHONE Out_R
42	AMP_WF	O	Sub_Woofer Out
43	LINE_L	O	LINE Out_L
44	LINE_R	O	LINE Out_R
45	GND	-	GND
46	SAL_SC2	I	AUDIO IN_L (S-VIDEO)
47	SAR_SC2	I	AUDIO IN_R (S-VIDEO)
48	CVBSAL_SC1	I	AUDIO IN_L (AV)
49	CVBSAR_SC1	I	AUDIO IN_L (AV)
50	GND	-	GND

Function: Tuner In

Connector type: FX2-40P-1.27DS

Specification: CNNT-Dip Right Angle-M-40PIN-1.27mm-0.5A

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	GND	-	GND
2	T1_RED	I	CC ,V-Chip RED In
3	T1_GRE	I	CC ,V-Chip GREEN In
4	T1_BLU	I	CC ,V-Chip BLUE In
5	GND	-	GND
6	VPC1_T1HS	O	CC ,V-Chip H Sync Out
7	VPC1_T1VS	O	CC ,V-Chip V Sync Out
8	GND	-	GND
9	T1_SIF	I	Tuner1 Audio In
10	T2_SIF	I	Tuner2 Audio In
11	GND	-	GND
12	T2_RED	I	CC ,V-Chip RED In
13	T2_GRE	I	CC ,V-Chip GREEN In
14	T2_BLU	I	CC ,V-Chip BLUE In
15	GND	-	GND
16	VPC2_T2HS	O	CC ,V-Chip H Sync Out
17	VPC2_T2VS	O	CC ,V-Chip V Sync Out
18	VPC2_T2CV	O	AV2 Feedback signal
19	VCC	O	DC Power 5V
20	TUNER_EN	I	Tuner Test Signal

21	GND	-	GND
22	T1_CVBS	I	AV1 In
23	T1_FB	I	CC,V-Chip OSD Timing Signal In
24	GND	-	GND
25	VPC1_T1CV	O	AV1 Feedback signal
26	GND	-	GND
27	VVINT	I	CC,V-Chip Interrupt In
28	RESETn	O	TT1 Reset Signal
29	GVINT	I	CC,V-Chip Interrupt In
30	GND	-	GND
31	VSCL	O	I2C Clock bus for V-Port
32	VSDA	I/O	I2C Data bus for V-Port
33	SCL	O	I2C Clock bus for G-Port
34	SDA	I/O	I2C Data bus for V-Port
35	GND	-	GND
36	T2_FB	I	CC,V-Chip OSD Timing Signal In
37	T2_CVBS	I	AV2 In
38	GND	-	GND
39	VCC	O	DC Power 5V
40	GND	-	GND

Function: LVDS output port

Connector type: LVDS-30pin

Specification: CNNT-LVDS-F SMD STRAIGHT-V-30 PIN-1.25mm

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	NC	-	No connection
2	NC	-	No connection
3	NC	-	No connection
4	NC	-	No connection
5	NC	-	No connection
6	NC	-	No connection
7	NC	-	No connection
8	GND	-	GND
9	TXE3p	O	Positive LVDS differential data output. Ch 3
10	TXE3m	O	Negative LVDS differential data output. Ch 3

11	TXECKp	O	Positive LVDS differential clock output.
12	TXECKm	O	Negative LVDS differential clock output
13	GND	-	GND
14	GND	-	GND
15	TXE2p	O	Positive LVDS differential data output. Ch 2
16	TXE2m	O	Negative LVDS differential data output. Ch 2
17	TXE1p	O	Positive LVDS differential data output. Ch 1
18	TXE1m	O	Negative LVDS differential data output. Ch 1
19	TXE0p	O	Positive LVDS differential data output. Ch 0
20	TXE0m	O	Negative LVDS differential data output. Ch 0
21	GND	-	GND
22	GND	-	GND
23	GND	-	GND
24	GND	-	GND
25	GND	-	GND
26	VCC	-	+5.0V power supply
27	VCC	-	+5.0V power supply
28	VCC	-	+5.0V power supply
29	VCC	-	+5.0V power supply
30	VCC	-	+5.0V power supply

Function: Power Input 1

Connector type:

Specification: M15-I25002CNNT M   15PIN   pitch 2.5mm DIP straight

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	V7_SYS	I	DC Power 7V IN
2	V5_SYS	I	DC Power 5V IN
3	V5_SYS	I	DC Power 5V IN
4	V5_SYS	I	DC Power 5V IN
5	V5_SYS	I	DC Power 5V IN
6	GND	-	GND
7	GND	-	GND
8	GND	-	GND
9	GND	-	GND
10	V7_SYS	I	DC Power 7V IN

11	GND	-	GND
12	LCD_INVON	O	Inverter On/Off
13	GND	-	GND
14	BRI	O	Backlight Brightness Control
15	GND	-	GND

Function: Power Input 2

Connector type:

Specification: M11-I25002CNNT M   11PIN   pitch 2.5mm DIP straight

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	V14_SYS	I	DC Power 14V IN
2	V14_SYS	I	DC Power 14V IN
3	V14_SYS	I	DC Power 14V IN
4	GND	-	GND
5	GND	-	GND
6	GND	-	GND
7	V12_SYS	I	DC Power 12V IN
8	GND	-	GND
9	V12_SYS	I	DC Power 12V IN
10	GND	-	GND
11	GND	-	GND

Function: Keypad In

Connector type:

Specification: CNNT F 15PIN DN-V 1.25mm SIM15

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	5V_KEY1	I-	DC +5V power input
2	GND		GND
3	KEY_X1	O	Signal sent from System to Keypad 1
4	KEY_X2	O	Signal sent from System to Keypad 2
5	KEY_X3	O	Signal sent from System to Keypad 3
6	KEY_Y1	I	Signal sent from Keypad to System 1

7	KEY_Y2	I	Signal sent from Keypad to System 2
8	KEY_Y3	I	Signal sent from Keypad to System 3
9	GND	-	GND
10	IRDATA1	I	Signal sent from IR to Keypad
11	GND	-	GND
12	LED11	O	Signal for LED 1
13	LED22	O	Signal for LED 2
14	LED33	O	Signal for LED 3
15	LED44	O	Signal for LED 4

INTERFACE BOARD

Function: Interface Out Port

Connector type:

Specification: NNT-CENTRONIC DIP RIGHT ANGLE-M-50 pin-2.16 mm

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	GND		GND
2	NC	-	No connection
3	NC	-	No connection
4	GND	-	GND
5	GND	-	GND
6	NC	-	No connection
7	NC	-	No connection
8	NC	-	No connection
9	NC	-	No connection
10	GND	-	GND
11	YPbPr_ Pr	O	YPbPr_ Pr out
12	YPbPr _Pb	O	YPbPr _Pb out
13	YPbPr _ Y	O	YPbPr _ Y out
14	GND	-	GND
15	GND	-	GND
16	NC	-	No connection
17	NC	-	No connection
18	NC	-	No connection
19	NC	-	No connection
20	GND	-	GND

21	AL2_YCbCr	O	Audio out_L YCBCR
22	AR2_YCbCr	O	Audio out_R YCBCR
23	AL1_ YPbPr	O	Audio out _L YPbPr
24	AR1_ YPbPr	O	Audio out _R YPbPr
25	GND		GND
26	GND		GND
27	CVBS_SC1	O	AV out
28	YCVBS_SC2	O	S-VIDEO_Y out
29	CIN_SC2	O	S-VIDEO_C out
30	GND	-	GND
31	NC	-	No connection
32	YCBCR_CR	O	YCBCR_CR out
33	YCBCR_CB	O	YCBCR_CB out
34	YCBCR_Y	O	YCBCR_Y out
35	GND	-	GND
36	NC	-	No connection
37	NC	-	No connection
38	TPA_MODE	I	EARPHONE TEST
39	GND	-	GND
40	EAR_LOUT	I	EARPHONE Out_L
41	EAR_ROUT	I	EARPHONE Out_R
42	AMP_WFOUT	I	Sub_Woofer Out
43	LINE_LOUT	I	LINE Out_L
44	LINE_ROUT	I	LINE Out_R
45	GND	-	GND
46	SL_SC2	O	AUDIO out_L (S-VIDEO)
47	SR_SC2	O	AUDIO out _R (S-VIDEO)
48	CVBSAL_SC1	O	AUDIO out _L (AV)
49	CVBSAR_SC1	O	AUDIO out _R (AV)
50	GND	-	GND

Function: YPbPr & YcbCr Input Port

Connector type: RCA

Specification: CNNT-RCA*6Green Blue Red /Green Blue Red-F DIP RIGHT ANGLE 8.3   -9PIN-

Pin Definition

Pin No.	Pin Name	I/O	Description
1	YPbPr_Y	I	YPbPr _ Y out
2	YPbPr _Pb	I	YPbPr_ Pb out
3	YPbPr _Pr	I	YPbPr _Pr out
4	YCBCR_ Y	I	YCBCR_Y out
5	YCBCR_CB	I	YCBCR_CB out
6	YCBCR_CR	I	YCBCR_CR out
7	GND	-	GND
8	GND	-	GND
9	GND	-	GND

Function: Audio Input Port 1(for YPbPr & YcbCr)

Connector type: RCA

Specification: CNNT-RCA*4 Red White/Red White-F DIP RIGHT ANGLE 8.3   -6PIN

Pin Definition			
Pin No.	Pin Name	I/O	Description
1	AR1_ YPbPr	I	Audio IN _R YPbPr
2	AL1_ YPbPr	I	Audio IN _L YPbPr
3	AR2_YCbCr	I	Audio IN _R YCBCR
4	AL2_YCbCr	I	Audio IN _L YCBCR
5	GND	-	GND
6	GND	-	GND

Function: CVBS & S-VIDEO Input Port

Connector type:

Specification: CNNT-RCA*1 Yellow+S-VIDEO*1 Black-F DIP RIGHT ANGLE 8.3   -9PIN

Pin Definition			
Pin No.	Pin Name	I/O	Description
1	CIN_SC2	I	S-VIDEO_C IN
2	YCVBS_SC2	I	S-VIDEO_Y IN
3	GND	O	GND
4	GND	O	GND
5	CVBS_SC1	I	AV IN
6	GND	-	GND

7	GND	-	GND
8	GND	-	GND
9	GND	-	GND

Function: Audio Input Port 2(for CVBS & S-VIDEO)

Connector type: RCA

Specification: CNNT-RCA*4 Red White/Red White-F DIP RIGHT ANGLE 8.3   -6PIN

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	CVBSAR_SC1	I	AUDIO IN _R (AV)
2	CVBSAL_SC1	I	AUDIO IN _L (AV)
3	SR_SC2	I	AUDIO IN_R (S-VIDEO)
4	SL_SC2	I	AUDIO IN_L (S-VIDEO)
5	GND	-	GND
6	GND	-	GND

Function: Audio Output Port (Sub-Woofer & Line Out_R)

Connector type: RCA

Specification: CNNT-RCA*2 Up-Black Down-Red-F DIP RIGHT ANGLE 8.3   -3PIN

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	AMP_WFOUT	O	Sub_Woofer Out
2	LINE_ROUT	O	LINE Out_R
3	GND	-	GND

Function: EARPHONE Output

Connector type:

Specification: CNNT-EAR Phone Jack-H-F-5pin-3.6   -Dip

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	EAR_ROUT	O	EARPHONE Output_R
2	GND	-	GND

3	TPA_MODE	-	EARPHONE TEST
4	EAR_LOUT	O	EARPHONE Output_L
5	GND	-	GND

Function: Audio Output Port (Line Out_L)

Connector type: RCA

Specification: CNNT-RCA*1 F DIP RIGHT ANGLE WHITE-3 PIN -8.3

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	LINE_LOUT	O	LINE Out_L

TUNER BOARD

Function: Tuner Out

Connector type: FX2-40S-1.27DS

Specification: CNNT-Dip Right Angle-F -40PIN-1.27mm-0.5A

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	GND	-	GND
2	T1_RED	O	CC ,V-Chip RED Out
3	T1_GRE	O	CC ,V-Chip GREEN Out
4	T1_BLU	O	CC ,V-Chip BLUE Out
5	GND	-	GND
6	VPC1_T1HS	I	CC ,V-Chip H Sync In
7	VPC1_T1VS	I	CC ,V-Chip V Sync In
8	GND	-	GND
9	T1_SIF	O	Tuner1 Audio Out
10	T2_SIF	O	Tuner2 Audio Out
11	GND	-	GND
12	T2_RED	O	CC ,V-Chip RED Out
13	T2_GRE	O	CC ,V-Chip GREEN Out
14	T2_BLU	O	CC ,V-Chip BLUE Out
15	GND	-	GND
16	VPC2_T2HS	I	CC ,V-Chip H Sync In
17	VPC2_T2VS	I	CC ,V-Chip V Sync In

18	VPC2_T2CV	I	AV2 Feedback signal
19	VCC	I	DC Power 5V
20	GND	-	GND
21	GND	-	GND
22	T1_CVBS	O	AV1 Out
23	T1_FB	O	CC,V-Chip OSD Timing Signal Out
24	GND	-	GND
25	VPC1_T1CV	I	AV1 Feedback signal
26	GND	-	GND
27	VVINT	O	CC,V-Chip Interrupt Out
28	RESETn	I	TT1 Reset Signal
29	GVINT	O	CC,V-Chip Interrupt Out
30	GND	-	GND
31	VSCL	I	I2C Clock bus for V-Port
32	VSDA	I/O	I2C Data bus for V-Port
33	SCL	I	I2C Clock bus for G-Port
34	SDA	I/O	I2C Data bus for G-Port
35	GND	-	GND
36	T2_FB	O	CC,V-Chip OSD Timing Signal Out
37	T2_CVBS	O	AV2 Out
38	GND	-	GND
39	VCC	I	DC Power 5V
40	GND	-	GND

KEYPAD BOARD

Function: Keypad Out

Connector type:

Specification: CNNT F 15PIN DN-V 1.25mm SIM15

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	5V_KEY1	I-	DC +5V power input
2	GND		GND
3	KEY_X1	I	Signal sent from System to Keypad 1
4	KEY_X2	I	Signal sent from System to Keypad 2
5	KEY_X3	I	Signal sent from System to Keypad 3
6	KEY_Y1	O	Signal sent from Keypad to System 1

7	KEY_Y2	O	Signal sent from Keypad to System 2
8	KEY_Y3	O	Signal sent from Keypad to System 3
9	GND	-	GND
10	IRDATA1	I	Signal sent from IR to Keypad
11	GND	-	GND
12	LED11	O	Signal for LED 1
13	LED22	O	Signal for LED 2
14	LED33	I	Signal for LED 3
15	LED44	I	Signal for LED 4

Function: IR IN

Connector type: Pin Header

Specification: CNNT-PIN HEADER-M DIP STRAIGHT-7pin-2.54mm

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	V5_KEY1	I-	DC +5V power input
2	GND	-	GND
3	IRDAT	I	Signal sent from IR to Keypad
4	LED1	O	Signal for LED 1
5	LED2	O	Signal for LED 2
6	GND		GND
7	GND		GND

IR BOARD

Function: IR OUT

Connector type: Female Header

Specification: CNNT-PIN HEADER-M DIP STRAIGHT-7pin-2.54mm

Pin Definition			
Pin No.	**Pin Name**	**I/O**	**Description**
1	V5_KEY1	I-	DC +5V power input
2	GND	-	GND
3	IRDAT	O	Signal sent from IR to Keypad
4	LED1	O	Signal for LED 1
5	LED2	O	Signal for LED 2

6	GND		GND
7	GND		GND

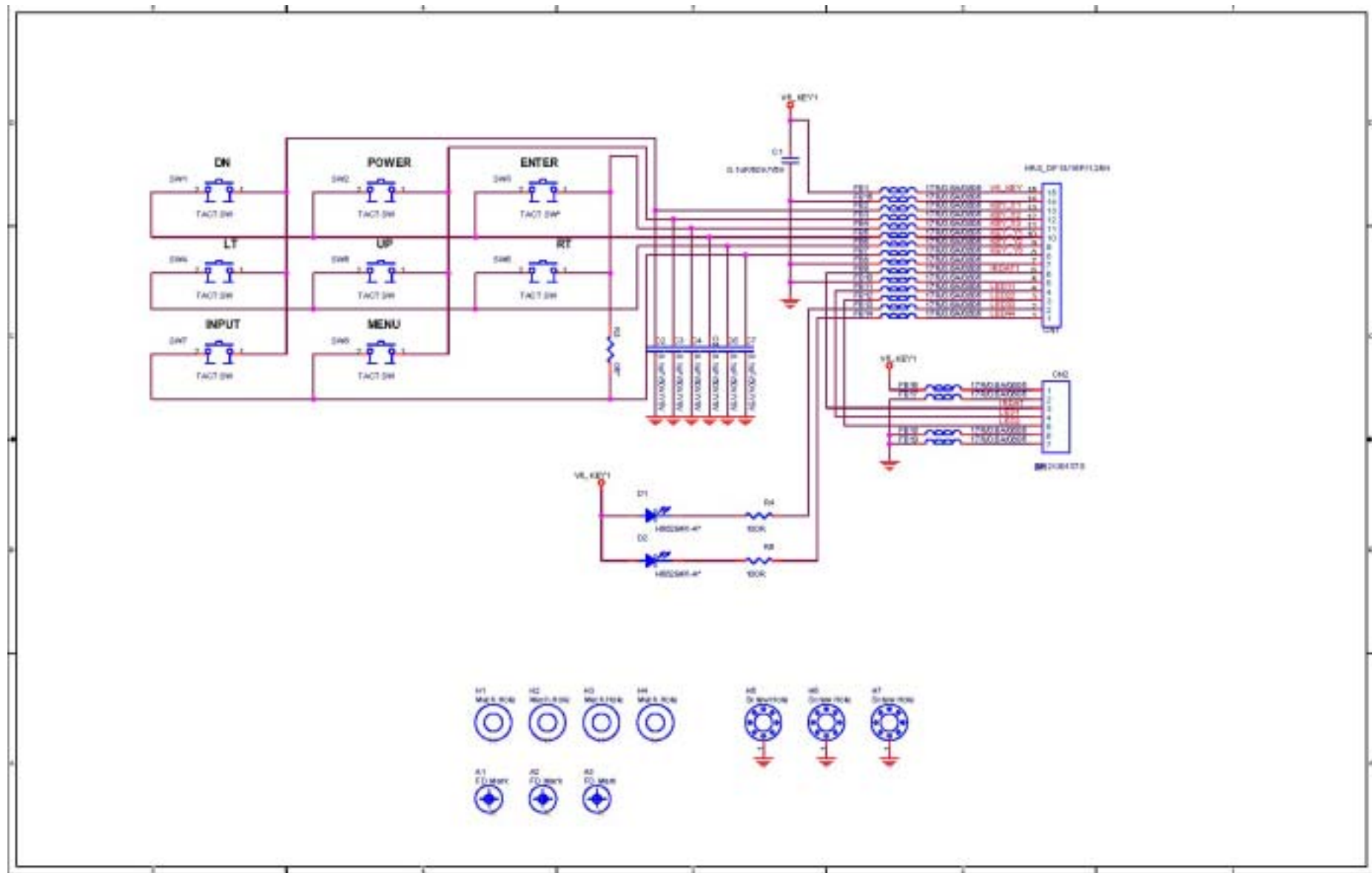# 3.   Schematic

3.0 Tuner Board
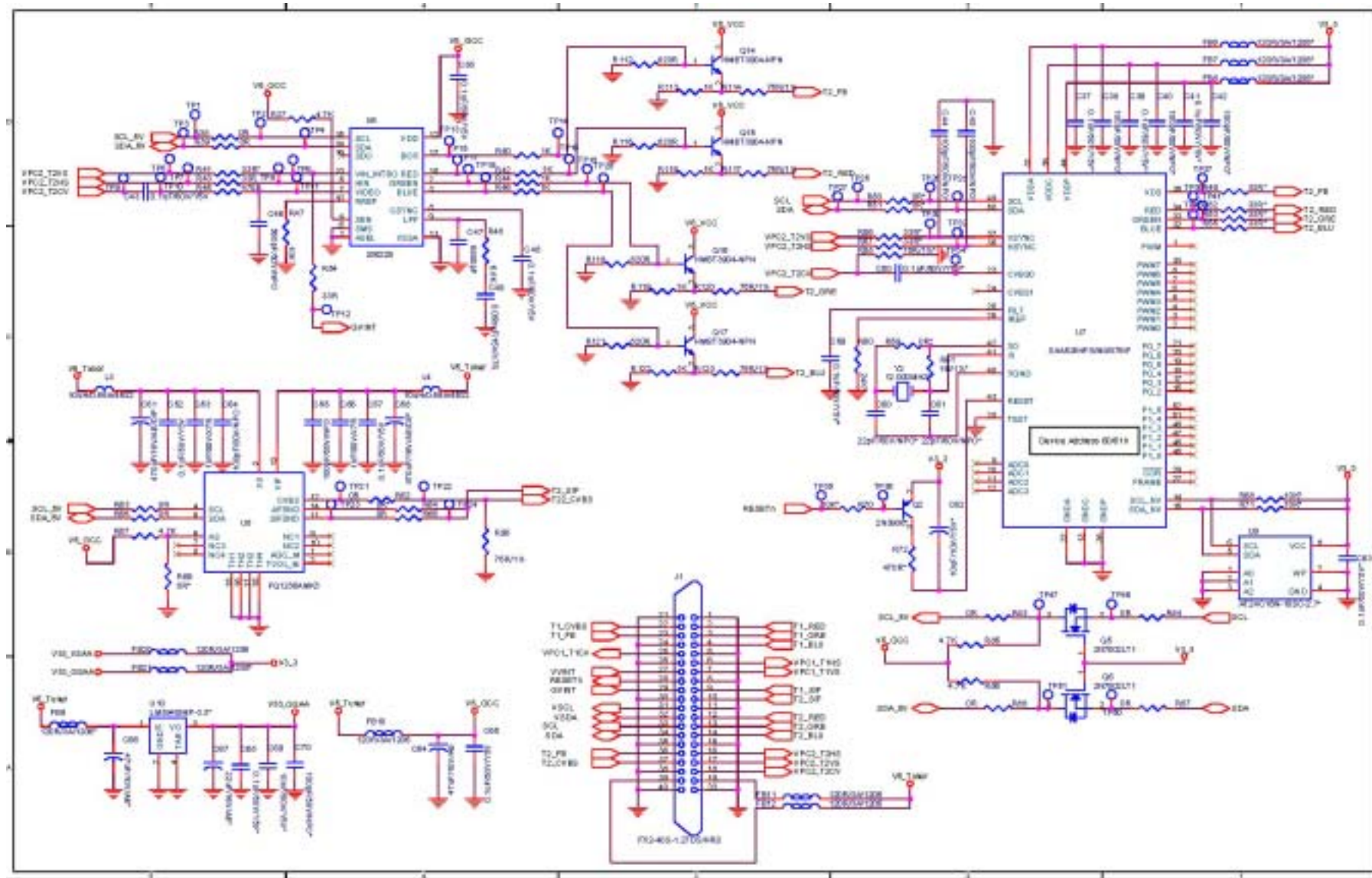
3.1 Graph Port Tuner
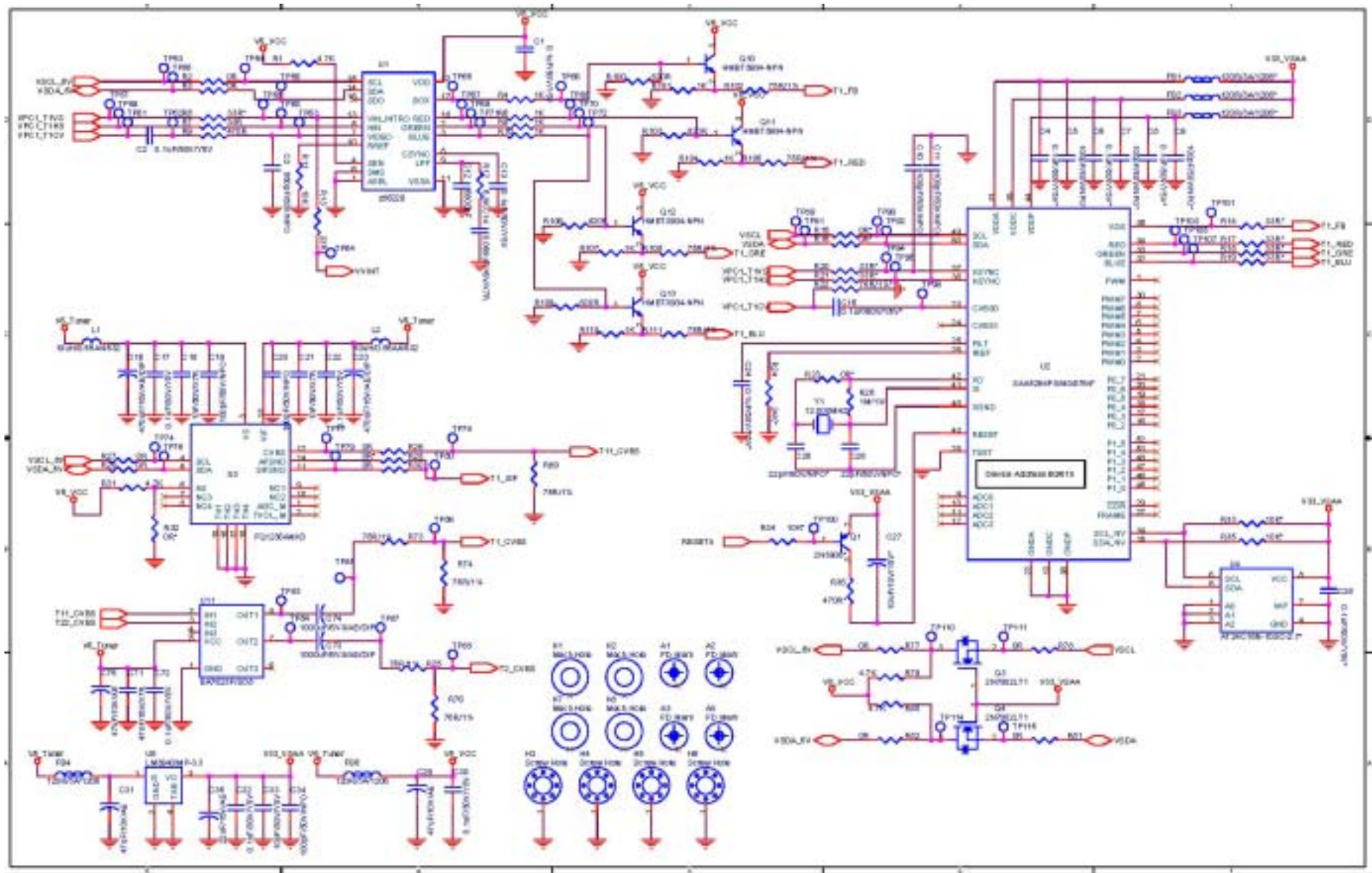
3.2 Interface Board
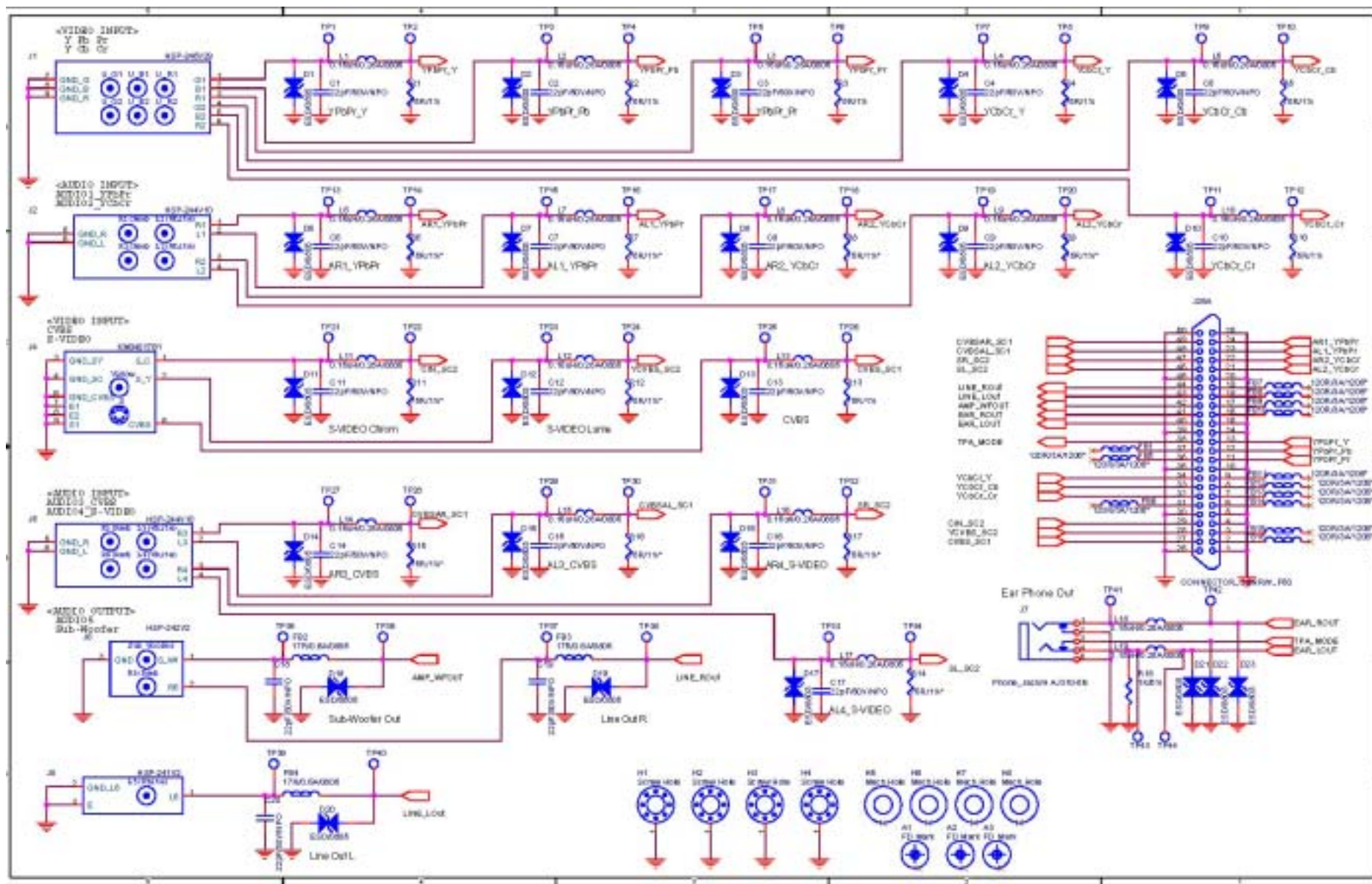
3.3 IR Board
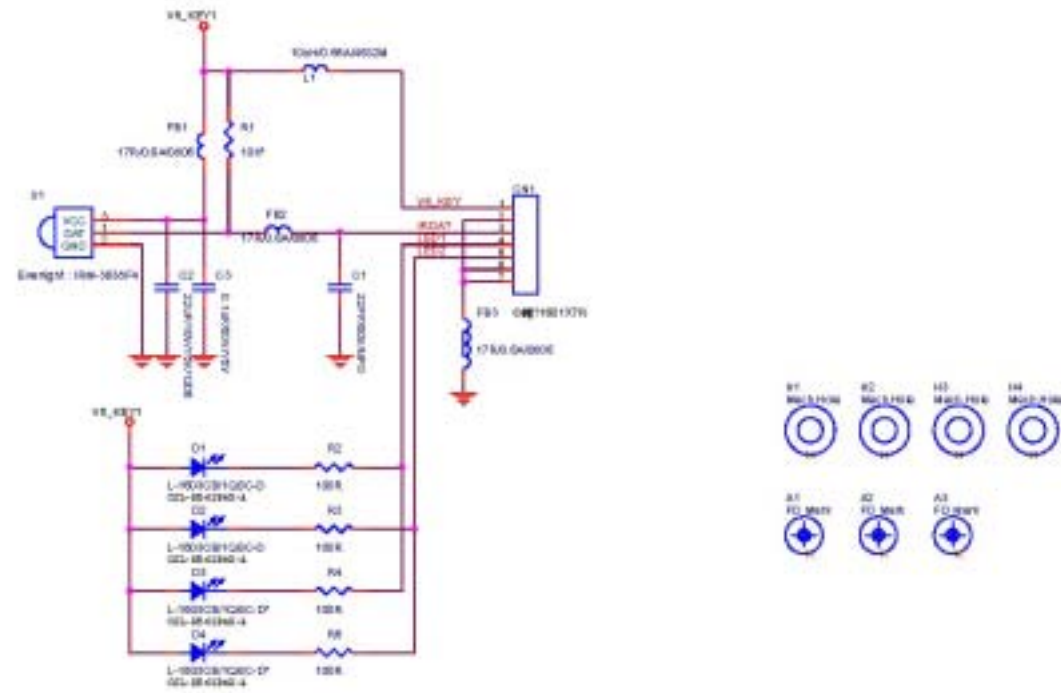
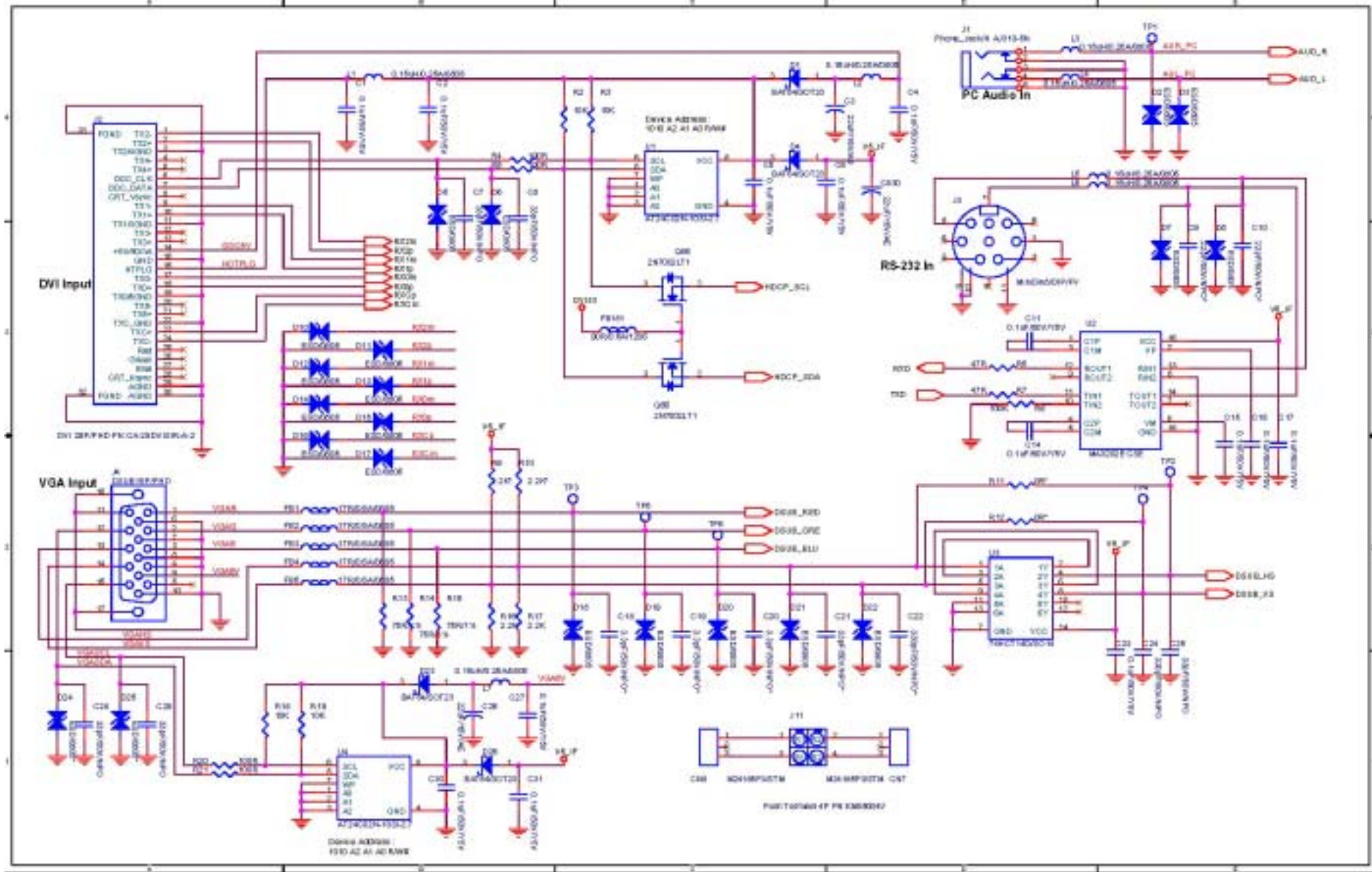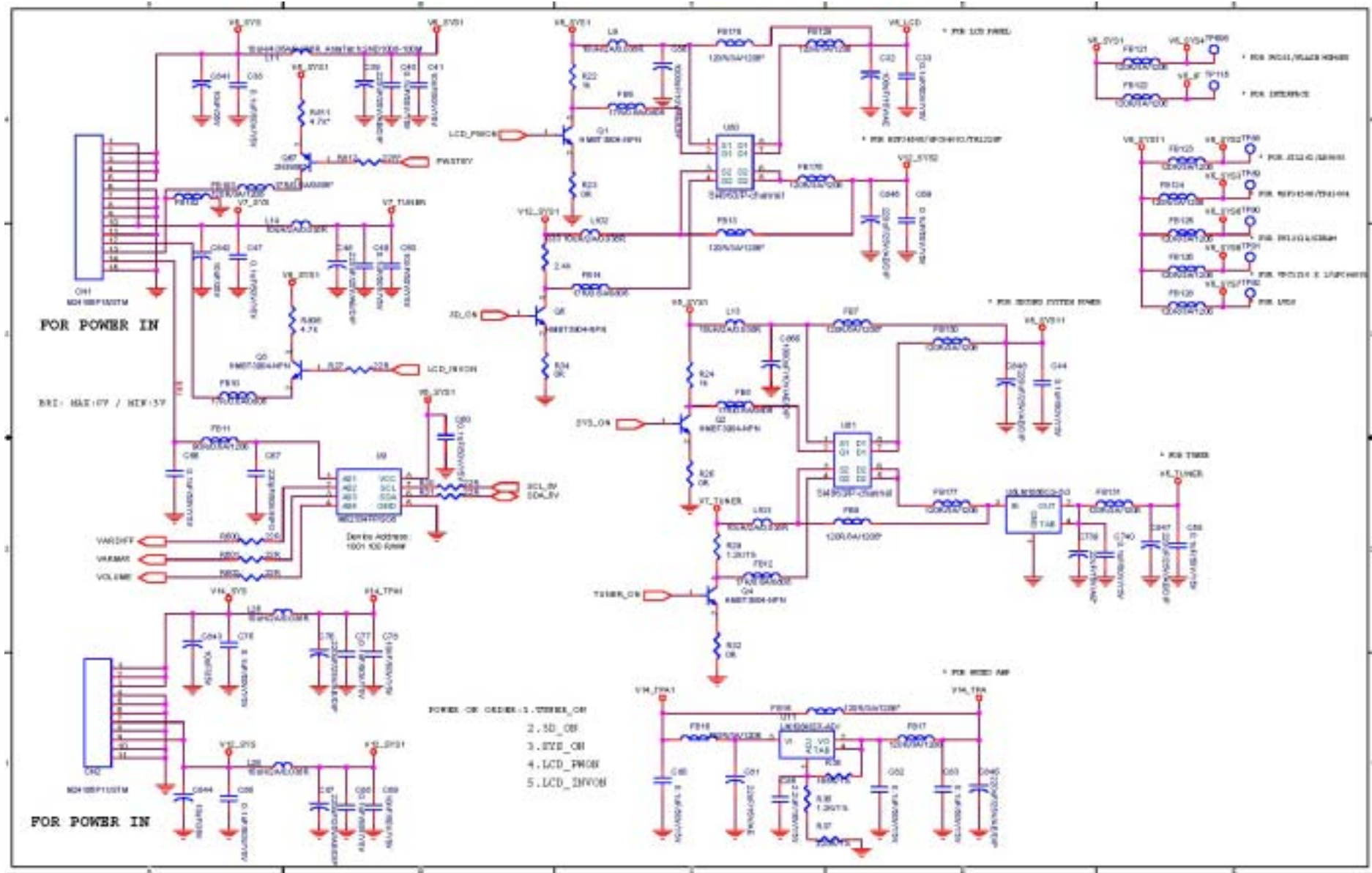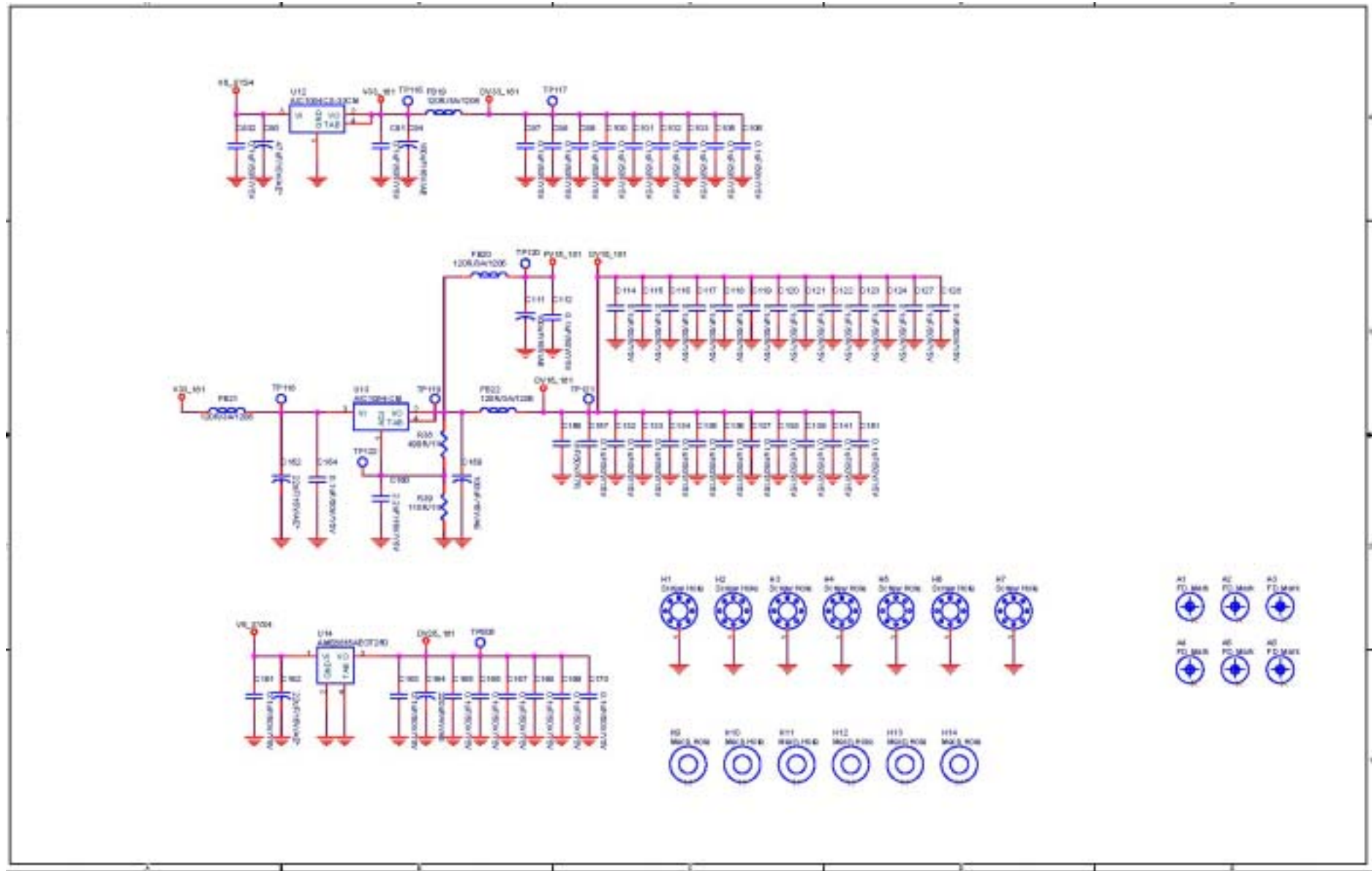## 3.4 Keypad Board

3.5 System Board-1 Graph Interface
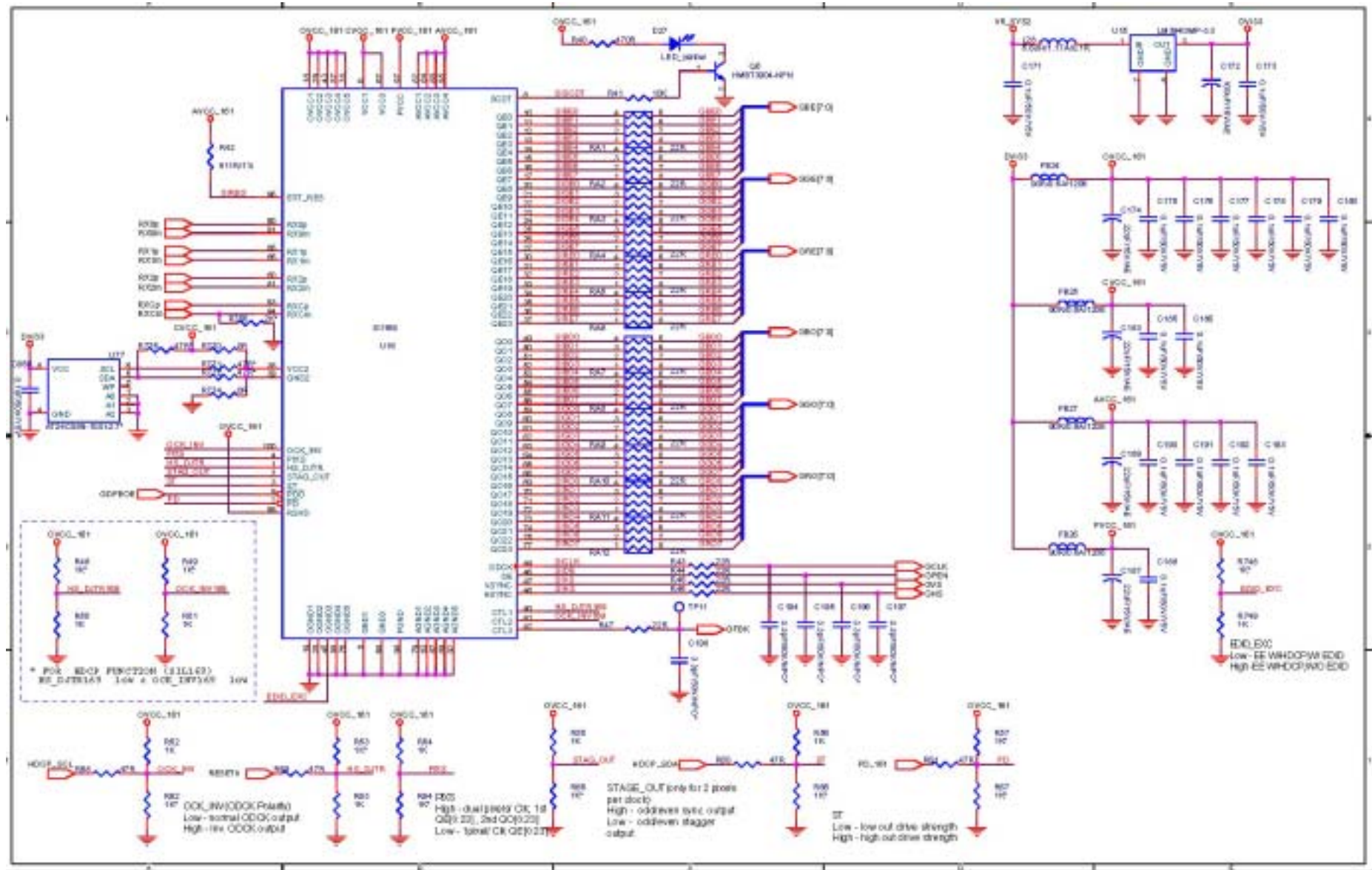
3.6 System Board-2 Power Management
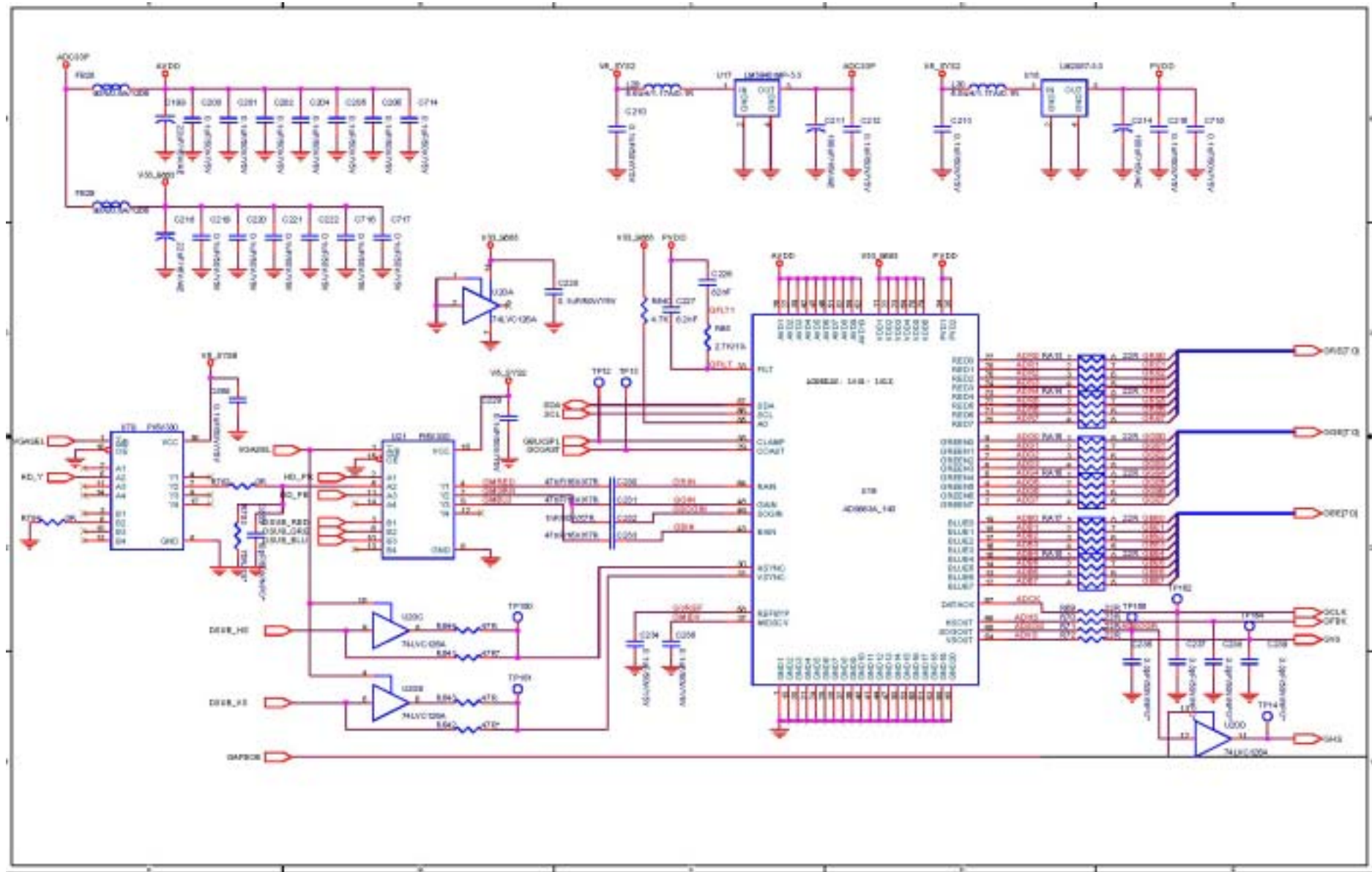
3.7 System Board-3 PW181 Power Management

3.8 System Board-4 DVI Receiver
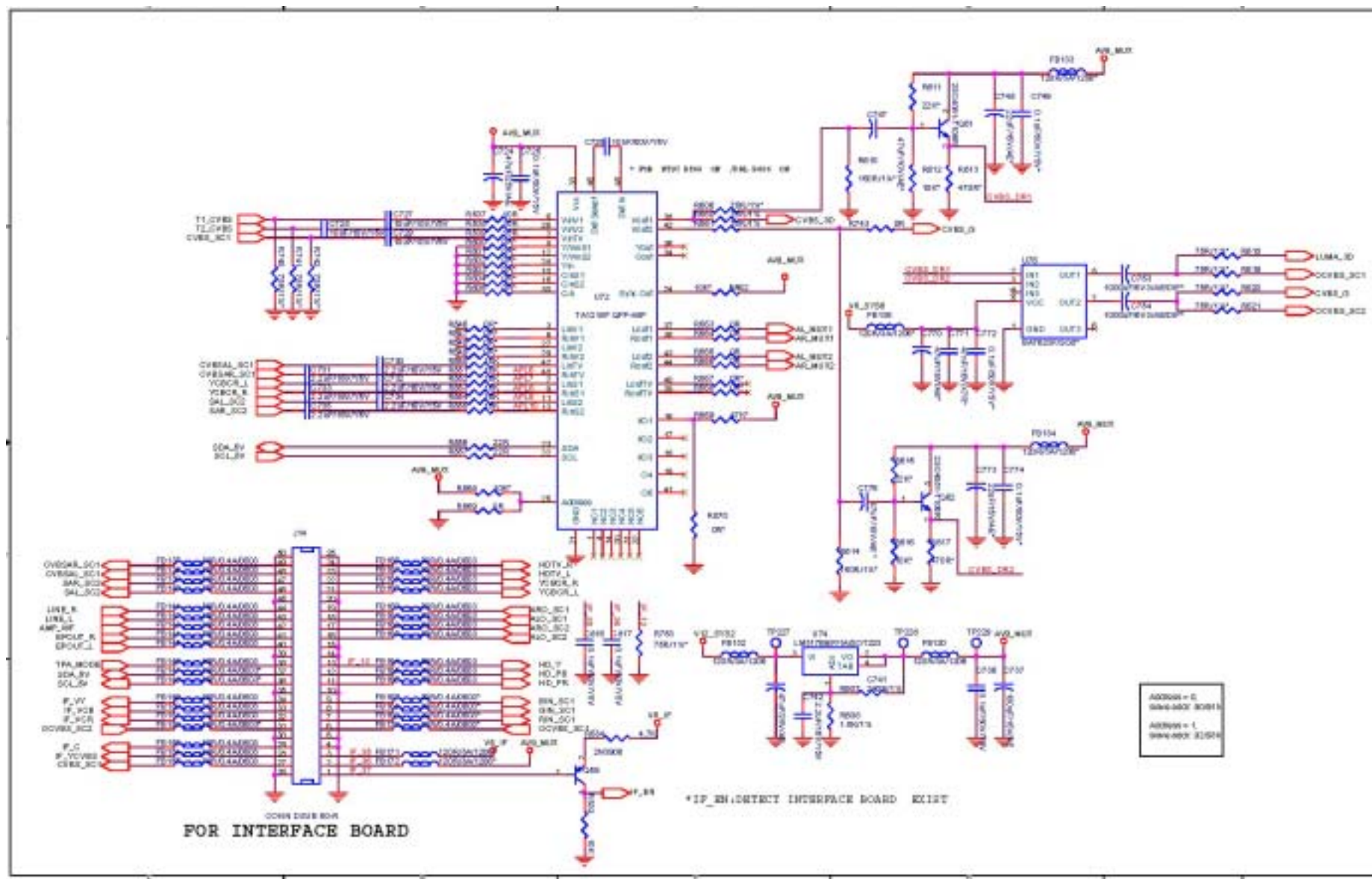
3.9 System Board-5 ADC

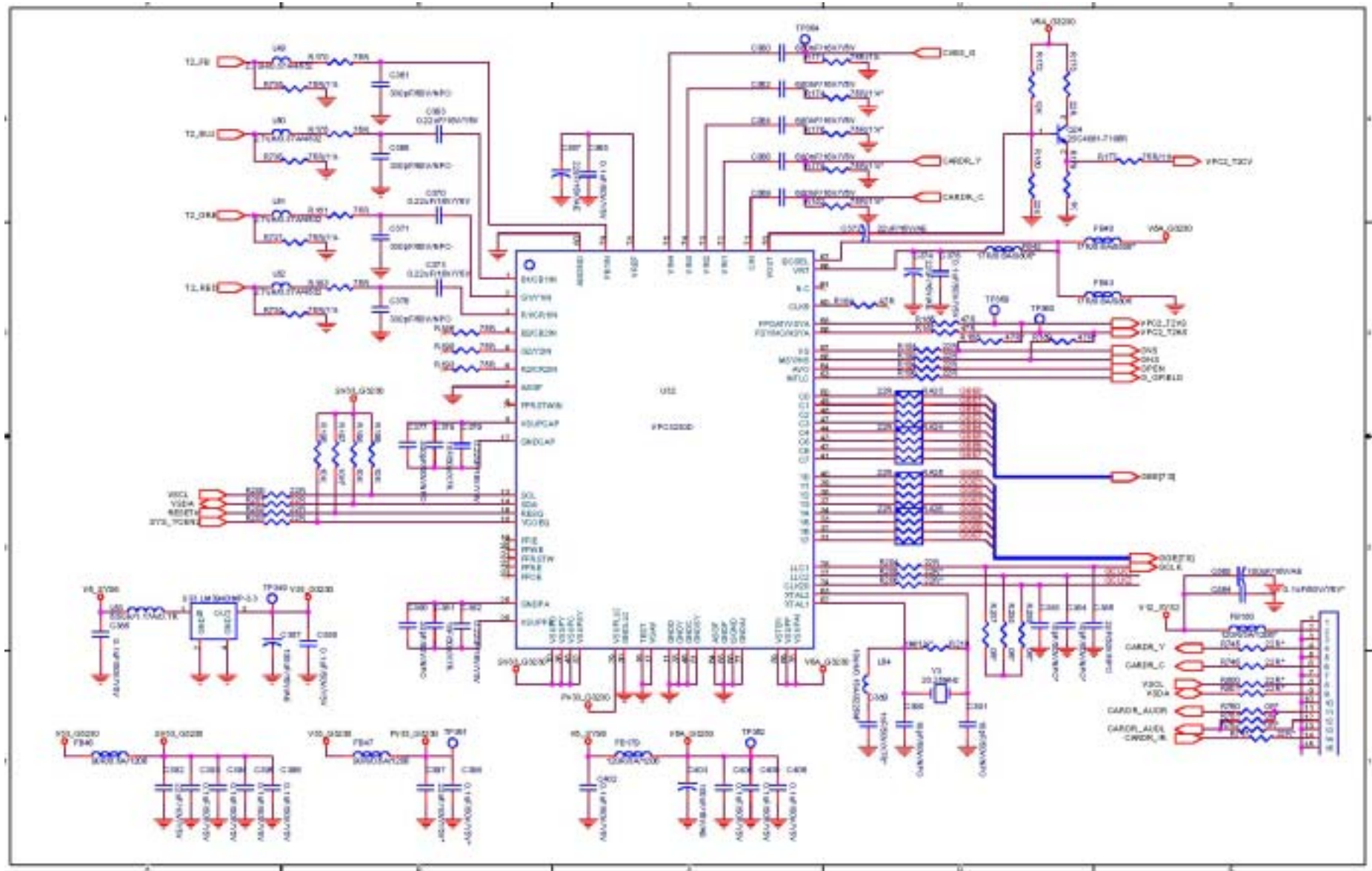## 3.10 System Board-6 A/V Switch

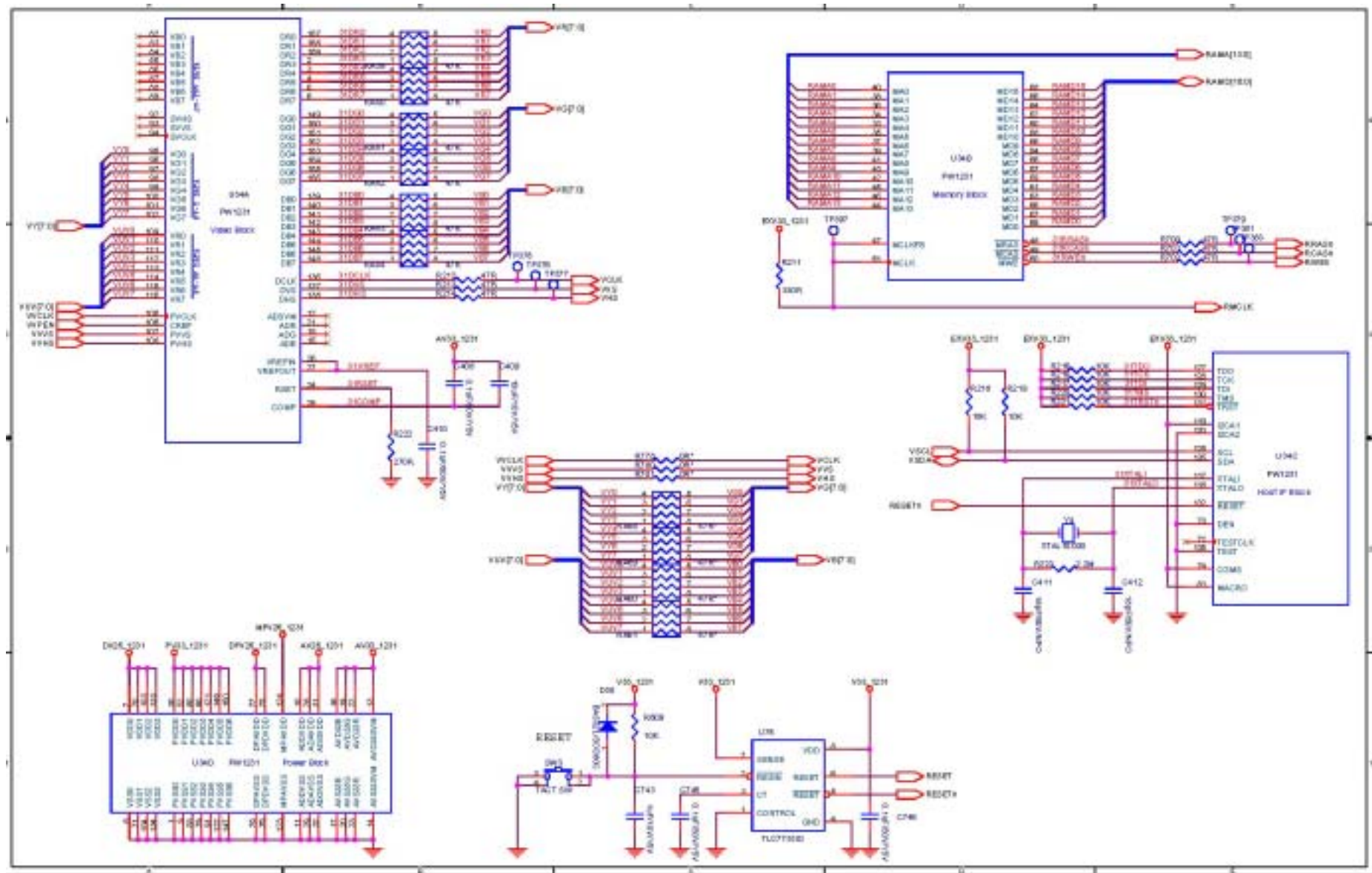FOR INTERFACE BOARD

50

3.11 System Board-7 3D Comb Filter
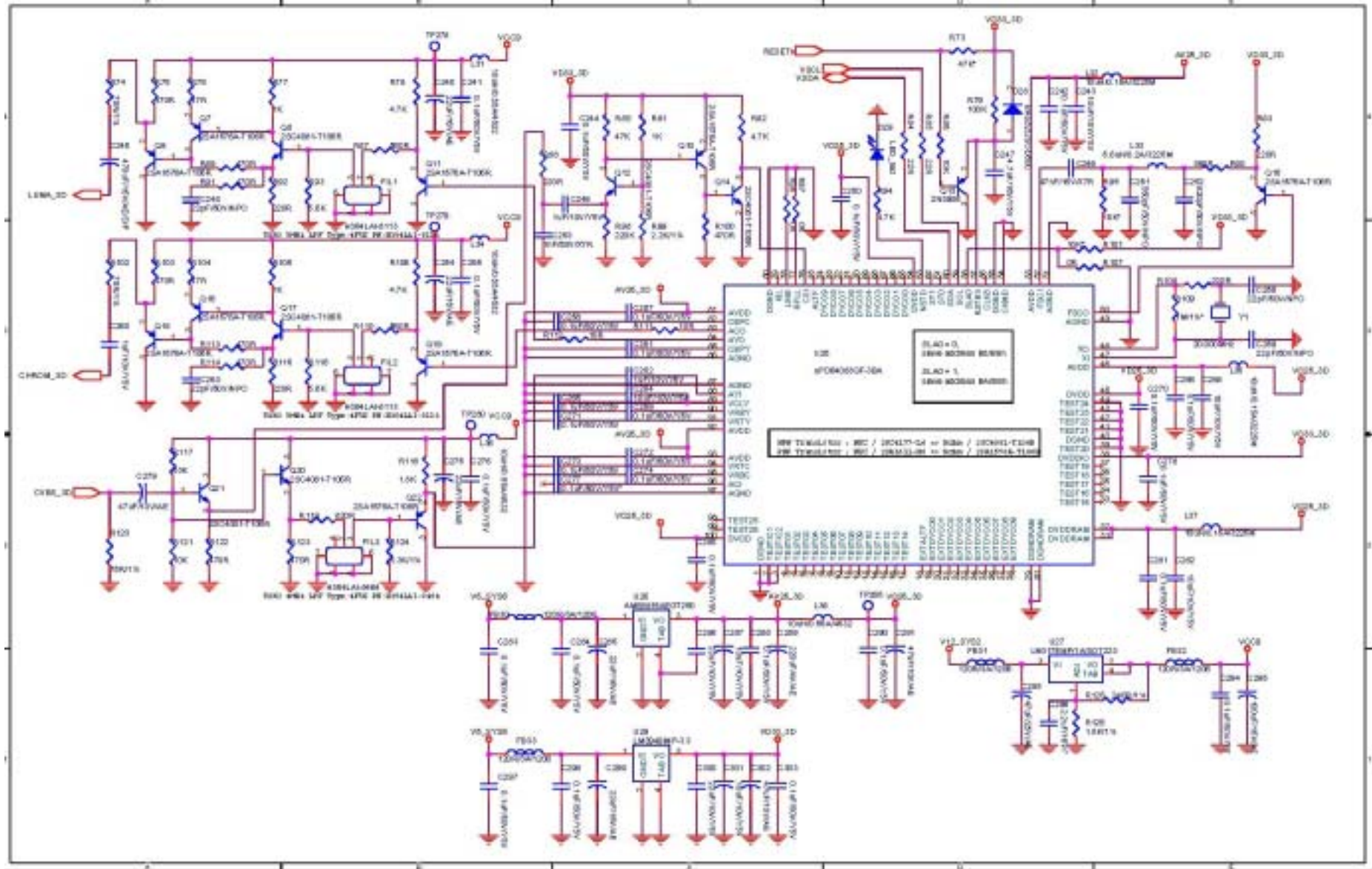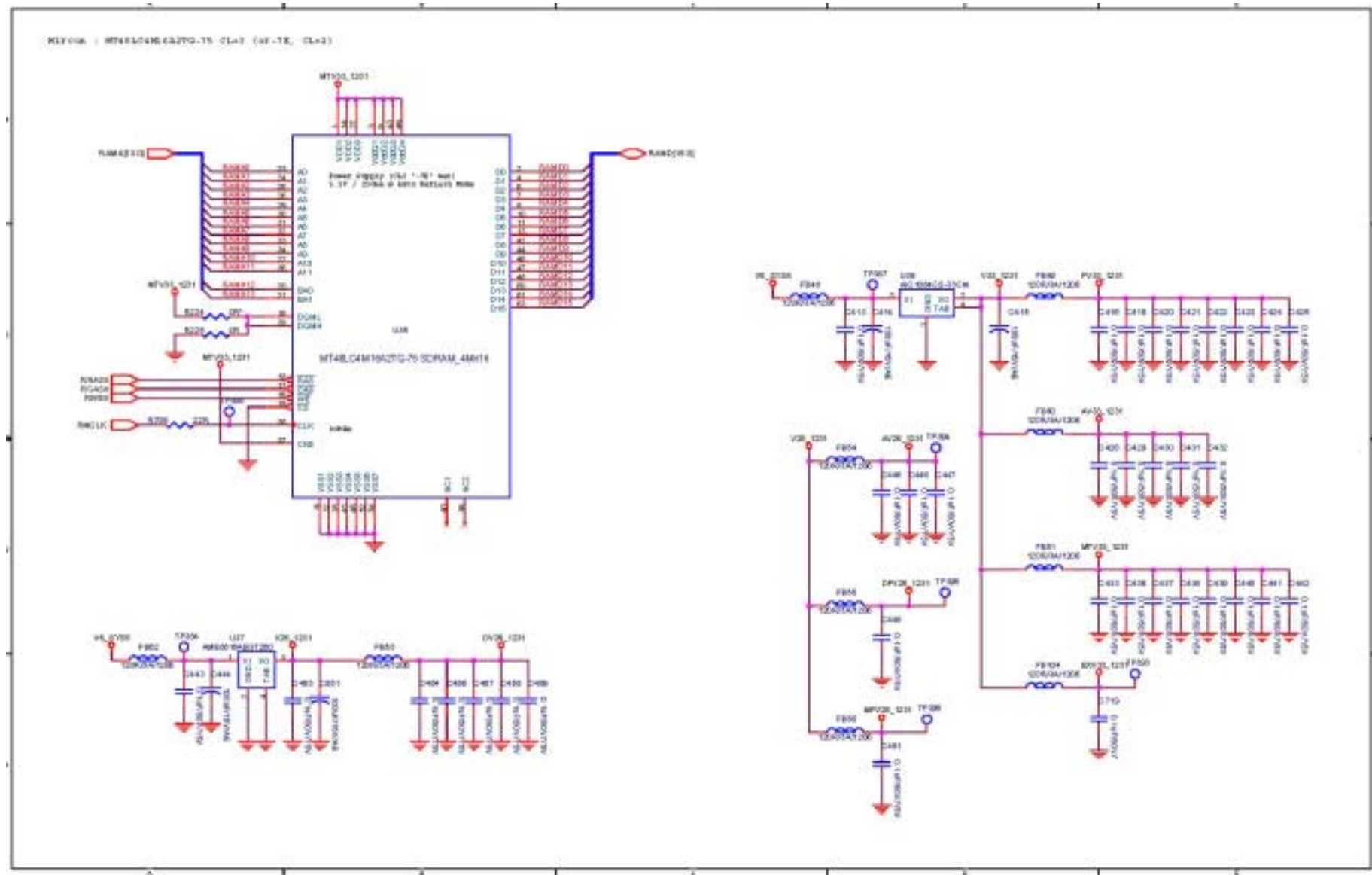
3.12 System Board-8 Video Decoder (V Port)
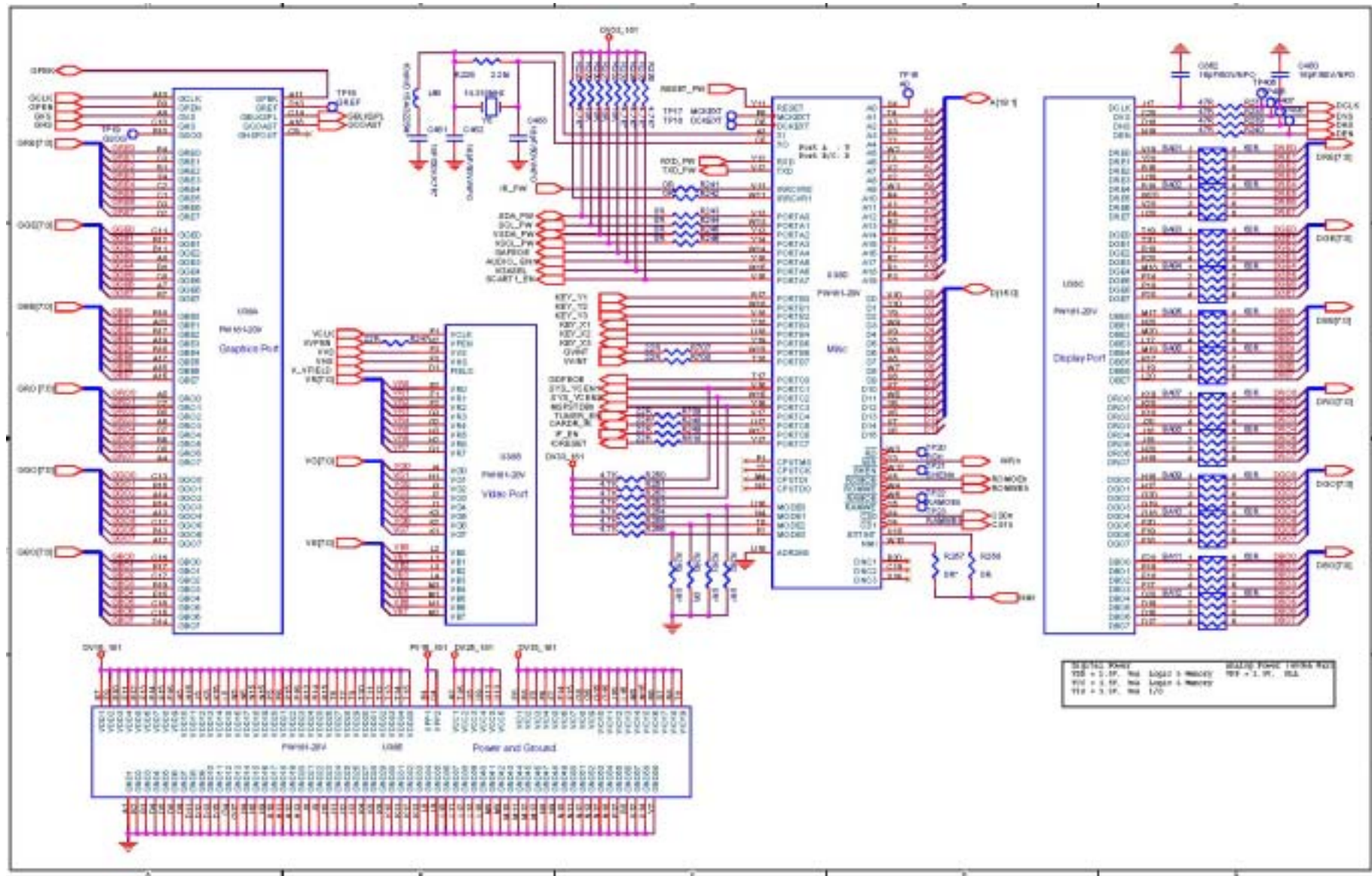
3.14 System Board-10 Deinterlace

3.15 System Board-11 SDRAM

3.16 System Board-12 Image Processor
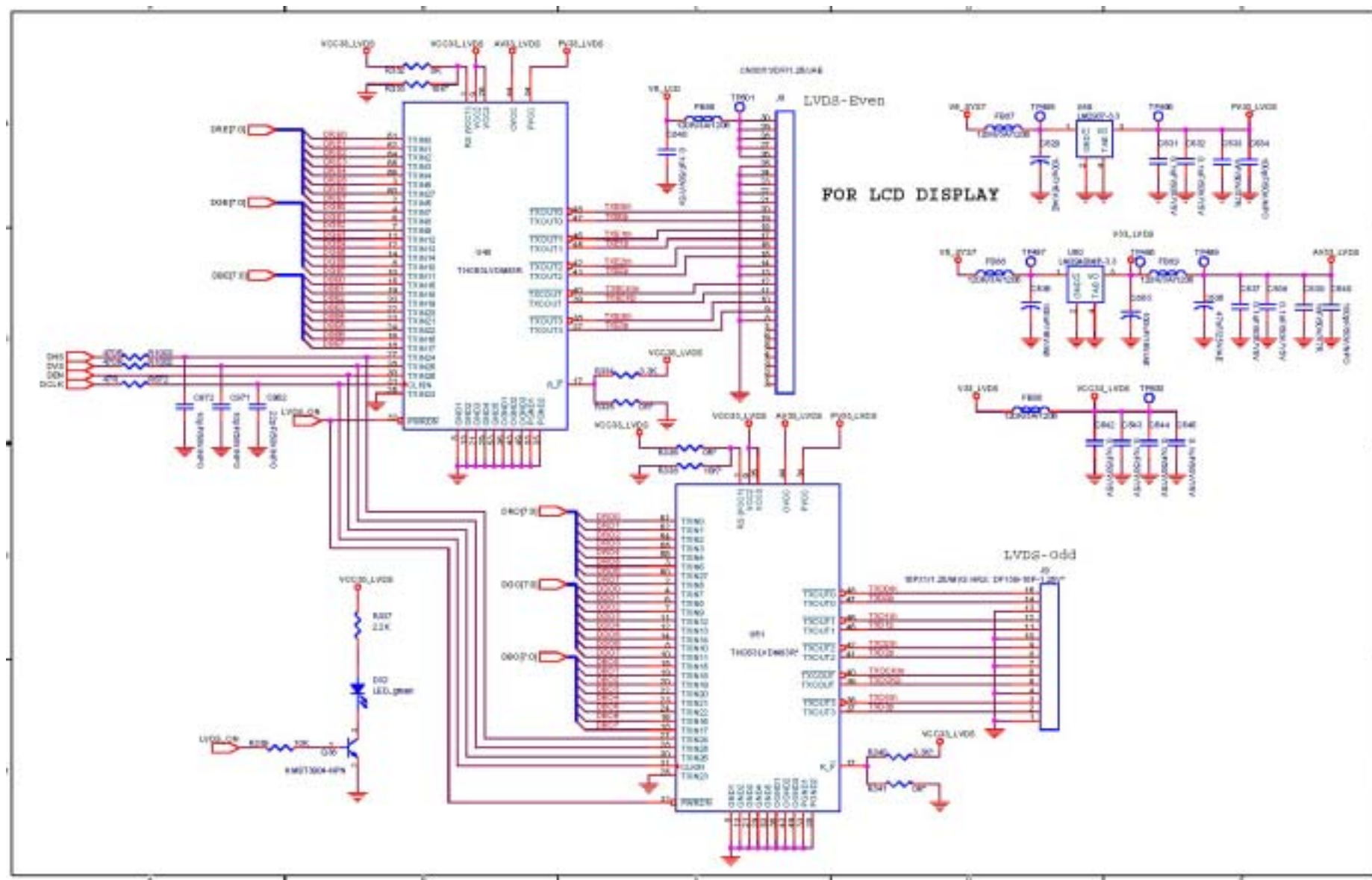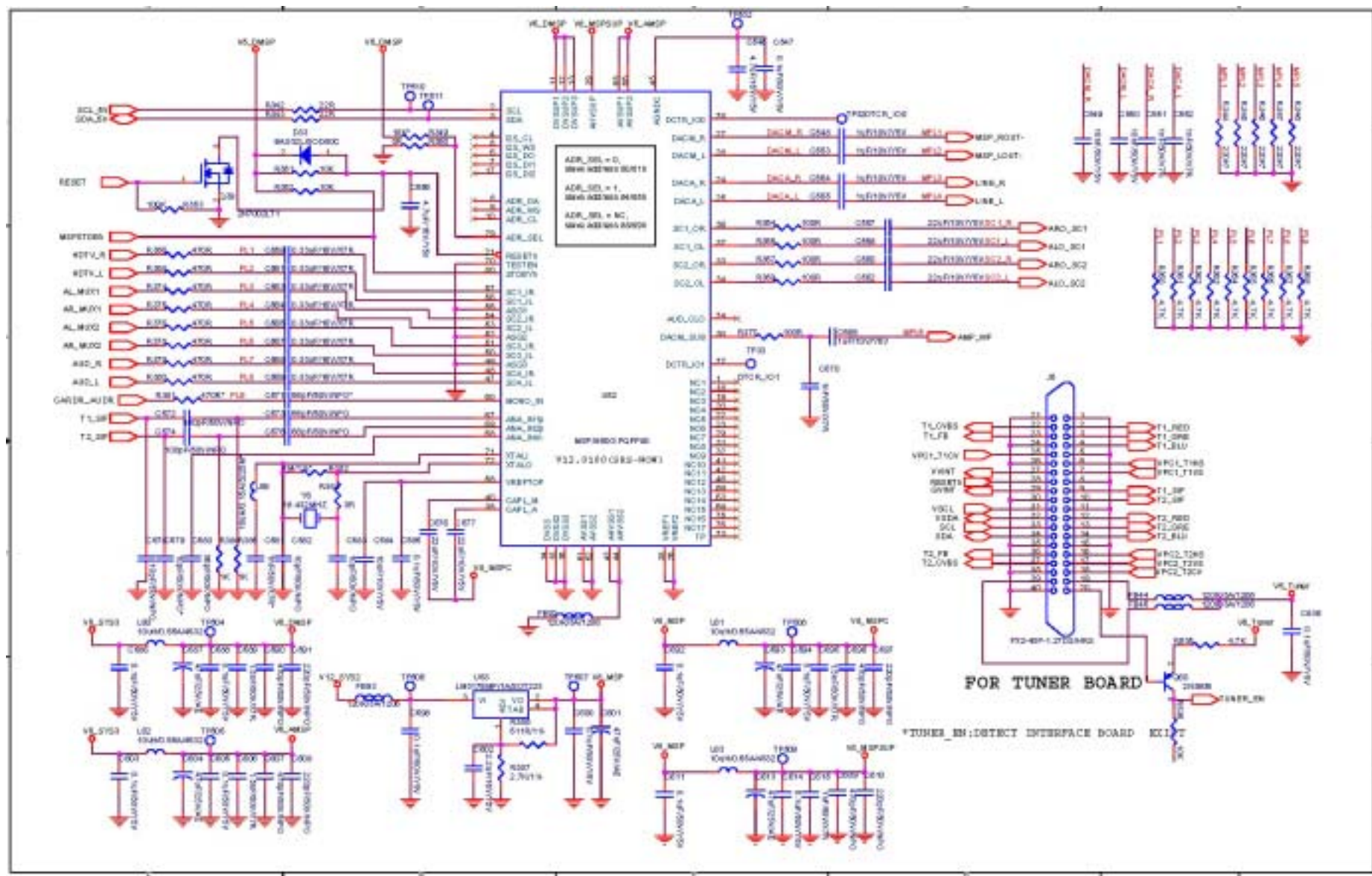
3.17 System Board-13 Flash Memory

3.18 System Board-14 Miscellaneous

FOR KEYPAD

3.19 System Board-15 LVDS

FOR LCD DISPLAY

LVDS-Even

LVDS-Odd
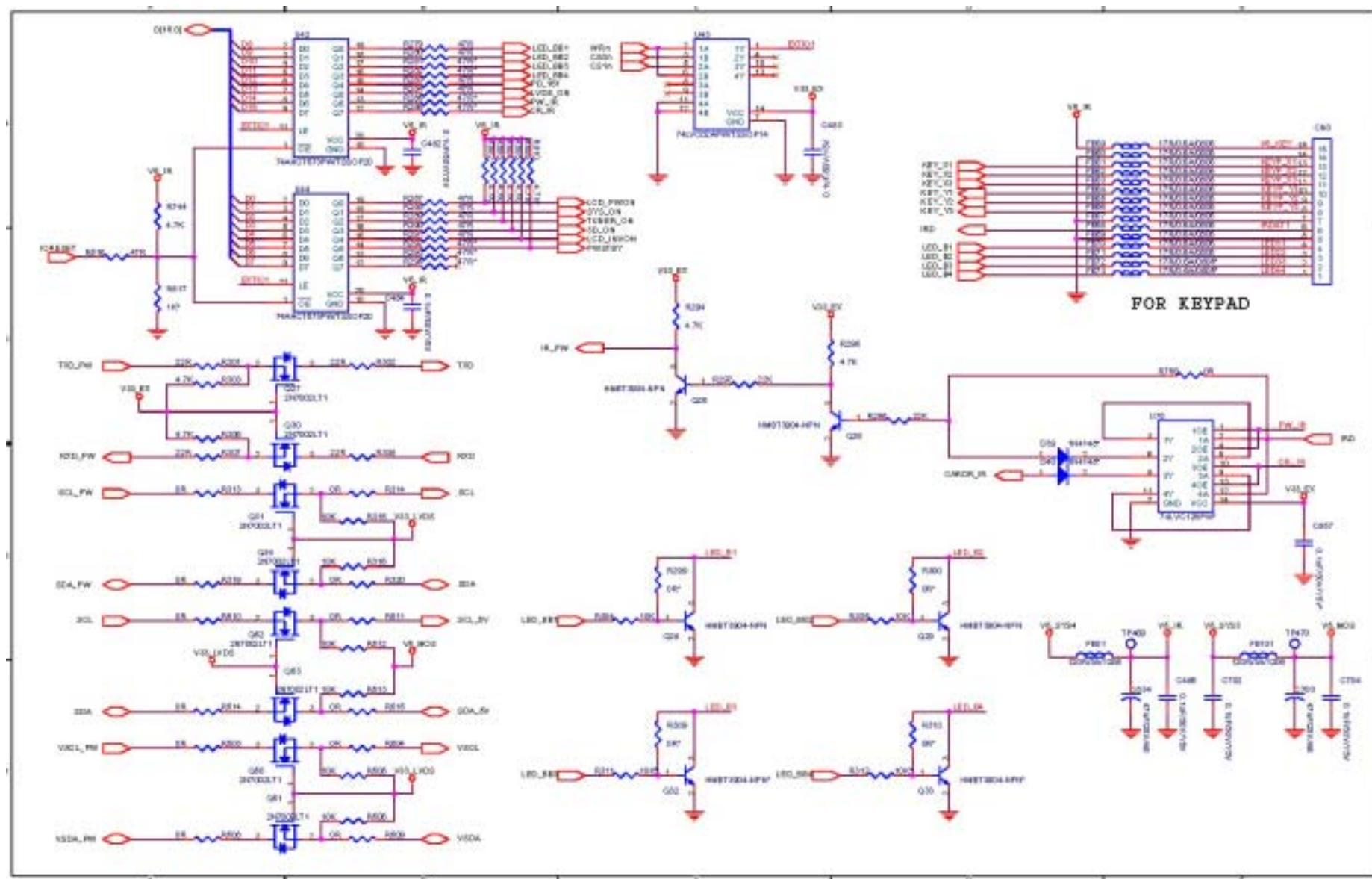
3.20 System Board-16 Audio DSP

3.21 System Board-17 Class D Audio PA

4. Troubleshooting

No Power

```
┌─────────────────────────────────────────────┐
│                                             │
│                  No Power                    │
│                                             │
└─────────────────────────────────────────────┘
                      │
                      ▼
        ◇ Check power plug is securely inserted into the power socket? ◇ ──No──▶  ┌─────────────────────┐
                      │                                                          │ Power plug is securely │
                     Yes                                                         │ inserted into the power│
                      │                                                          │        socket.         │
                      ▼                                                          └─────────────────────┘
        ◇ 1.Check Power to system Cable
          2.Check System to Keypad Cable
          3.Check Keypad and IR Board
                  confix? ◇ ──No──▶  ┌─────────────────────┐
                      │               │ Please replace the cable│
                     Yes              │ what cause the power on │
                      │               │        failed.         │
                      ▼               └─────────────────────┘
        ┌─────────────────────────────────────┐
        │ If power on still failed, please     │
        │      replace power module.           │
        └─────────────────────────────────────┘
```

No Sound

```
┌─────────────────────────────────────────────────┐
│                                                 │
│                  No Sound                       │
│                                                 │
└─────────────────────────────────────────────────┘
                       │
                       ▼
```

Check the speaker wire connector to system board? ──No──▶ Please connection the speaker wire to system board.

Yes

Check the input source and audio cable into the correct connector? ──No──▶ Confirm input source and audio cable select to the correct channel.

Yes

1.Keep OSD is not in mute mode.
2.Confirm the volume value is not 0.
3.Power off, and re-plug power socket again.
4.If items 1,2,3 have no problem, replace interface board or system board.

No Source Input

RGB or video source can't be found

Check OSD select correct? —No→ Confirm input source and the output of OSD select is correct.

Yes

Check image signal input at system board or interface board —No→ Check input source cable connection into the connector.

Yes

Replace system board or interface board.

Keypad Failed

Keypad no response

Yes

1. Check the cable of keypad to system board.
2. Check keypad founction.
3. If item 1,2 have no problem, please replace keypad board or system board.

IR Failed

IR no response

Check IR board connection in to keypad board? —No→ Please connection the IR board into keypad board.

Yes

Check remote control have energy? —No→ Change remote control battery.

Yes

Replace IR board

LED Failed

LED are not bright

Check the cable of system board to keypad? → No → Please connection the cable of system board to keypad.

Yes

Check keypad and IR board confix? → No → Please connection the IR board into keypad board.

Yes

Replace IR board

5. Firmware upgrade applications

Installation file: **Flashupgrader.exe**

COM port setting: COM1 as default

A *specific directory for update*:

There are some files should be in this directory. (bootcode.hex, configdata.hex, flasher.hex, gui.hex, romcode.hex, and FlashAll.inf)

In a new version firmware, FlashAll.inf is the same. The files of Hex depend on the different firmware version.

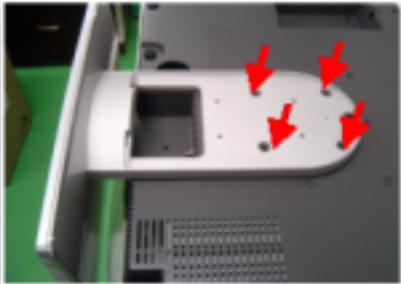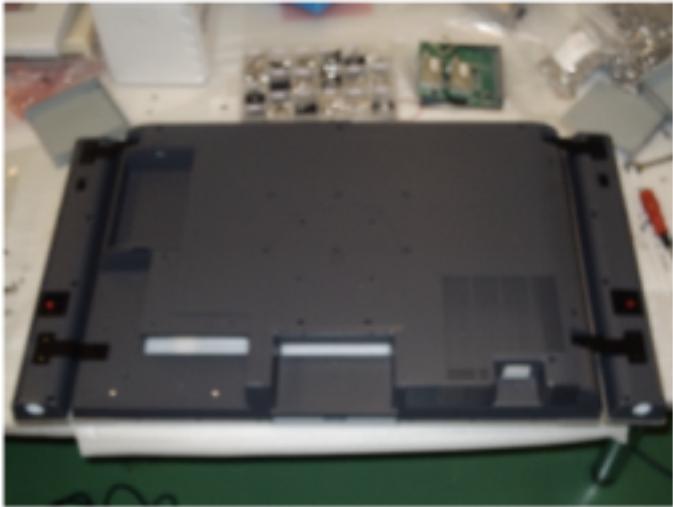*Cable switch*: on **S**ystem **S** side
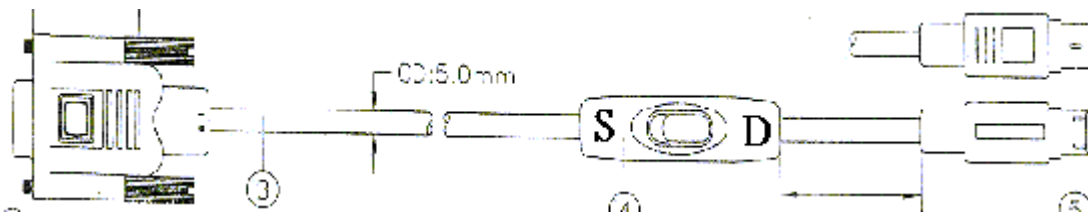
Power cord: Plug out before update
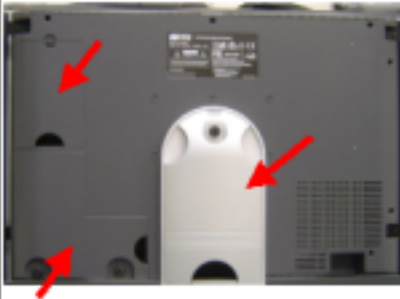
a. Insert RS232 cable in **Mouse** socket or **RS232** socket and make sure the power cord is out of AC inlet.

b. Execute **Flashupgrader.exe** then click the button of **Choose** on the top of display.

c. Open **FlashAll.inf** in the specific directory and then click the button of **Flash**. This indicator of this button will swap to **Cancel** instead of **Flash**. A message of **Waiting for target reset** is also showed.

d. Insert the power cord, and the update will be executed automatically.

e. After the whole process of update, the indicator of **Close** will appear again. Plug out the power cord as a reset to the TV, and the new firmware is ready.

Remark: <u>Serial</u> connection, <u>115200</u> Baud Rate, <u>COM1</u>, and <u>Flash</u> mode are the default in this execution.
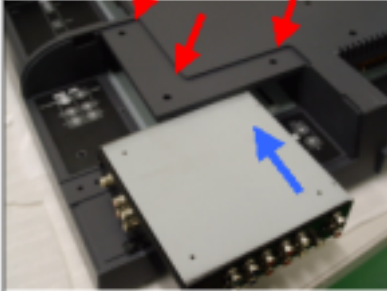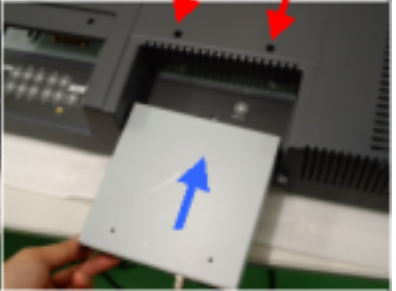
6. Standard Operation Procedure

6.0 Module assembly process
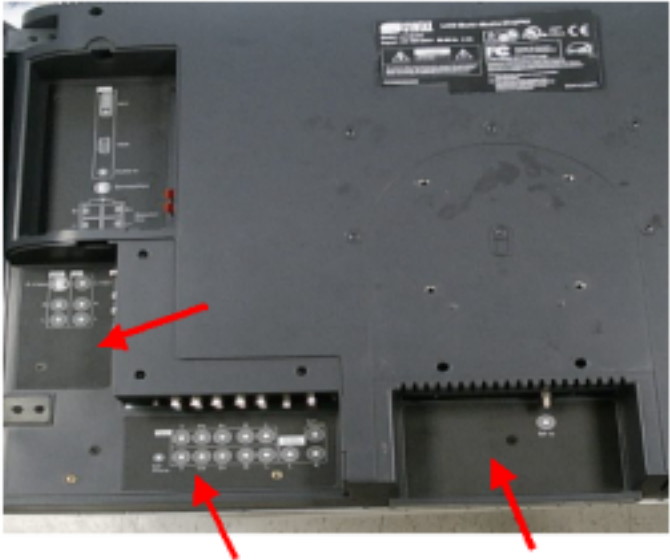
Step 1. Stand module loose

Standard operation procedure	Attention	P/N	Description	Illustration/ Remark
1、Take off INTERFACE COVER,AV COVER and CONN FIX COVER as Figure 1。 2、Loosen Screw M6*18 x4 and Take off STAND MODULE as Figure 2。 3、Disassembly finish as Figure 3。				Figure 1 Figure 2 Figure 3

Step 2. Tuner module and Interface module assembly

Standard operation procedure	Attention	P/N	Description	Illustration/ Remark
1、 Interface Module push into Back Cover as Blue Arrow in Figure 1。 2、 Lock M3*8 Screw x 3 as Red Arrow in Figure 1。 3、 Tuner Module push into Back Cover as Blue Arrow in Figure 2。 4、 Lock M3*8 Screw x 2 as Red Arrow Figure 2。 5、 Finish Subassembly as Figure 3 。	1、 M3*8-R-BLACK Torque Setting 3.5KG~4.0KG。	P7040383000 P7040382000 P231A3230850	P311 TUNER MODULE ASSY P311 INTERFACE MODULE ASSY M3*8-R-BLACK	Figure 1 Figure 2 Figure 3
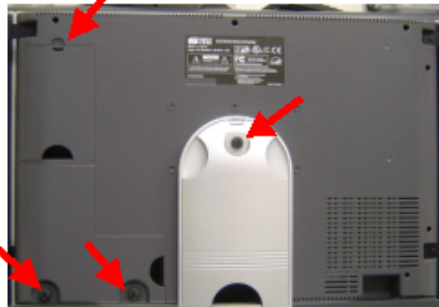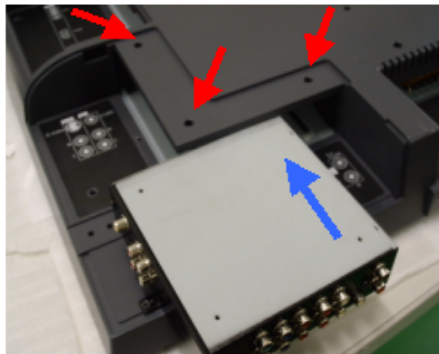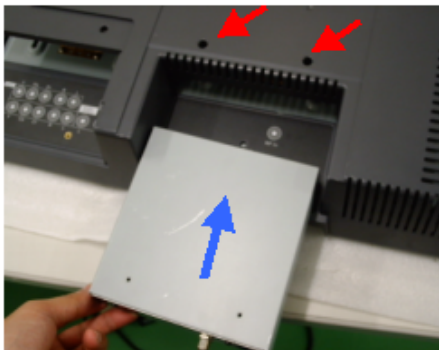
Step3. Label stick

Standard operation procedure	Attention	P/N	Description	Illustration/ Remark
1、Stick LCD TV AV PORT LABEL on Back Cover and align chamfer angle as Figure 1。 2、Stick LCD TV HDTV PORT LABEL on Back Cover and align chamfer angle as Figure 2。 3、Stick LCD TV TUNER PORT LABEL on Back Cover and align chamfer angle as Figure 3。 4、Finish Label Stick Process as Figure 4。	1.Label Chamfer angle must align Base Cover Chamfer angle	P31000320000 P31000330000 P31000340000	LCD TV AV PORT LABEL LCD TV HDTV PORT LABEL LCD TV TUNER PORT LABEL	Figure 1 Figure 2 Figure 3 P31000320000 P31000330000 P31000340000 Figure 4
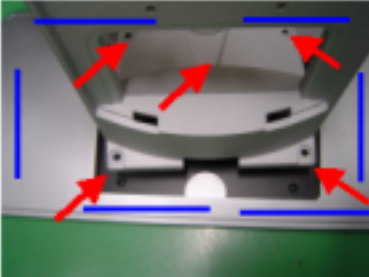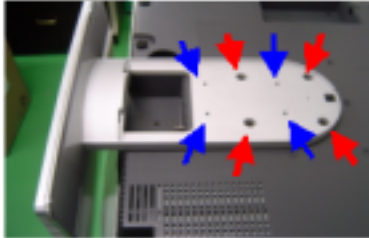
6.1 Module repair process

6.1.1 Tuner & Interface module

Standard operation procedure	Attention	P/N	Description	Quantity	Illustration/ Remark
1、Replace INTERFACE COVER without any Tooling as Figure1。 2、Replace AV and CONN FIX COVER before loosening Knob screw as Figure1 。 3、Replace INTERFACE MODULE and lock M3*8 Screw x 3 as Red Arrow in Figure 2。 4、Replace TUNER MODULE and lock M3*8 Screw x 2 as Red Arrow Figure 3。		P70403830000	P311 TUNER MODULE ASSY	1	Figure 1
		P70403820000	P311 INTERFACE MODULE ASSY	1	
		P60002040000	INTERFACE COVER	1	
		P76000800000	AV COVER MODULE ASSY	1	
		P76000810000	CONN FIX COVER MODULE ASSY	1	
		P231A3230850	M3*8-R-BLACK	5	Figure 2
					Figure 3

6.1.2 Stand module

Standard operation procedure	Attention	P/N	Description	Quantity	Illustration/ Remark
1、FOOT BASE METAL,FOOT BASE BOTTOM and PLASTIC FOOT tighten with M3*10 X 6 as Figure 1。 2、Turn over FOOT BASE BOTTOM as Figure2。 3、Assemble AL VERTICAL SUPPORT with M6*10 as Figure3。 4、Stick TAPE_V and TAPE_H on FOOT BASE BOTTOM as Figure3 Blue Line Position。 5、Press down FOOT BASE UP as Figure 4。 6、Plug AL VERTICAL SUPPORT hole with RUBBER PAD_1.5 as Figure 5 Blue Arrow。 7、Loosen Screw M6*18 x4 and replace STAND MODULE as Figure 5。		P21001300000	FOOT BASE METAL	1	Figure 1 Figure 2
		P60001981000	FOOT BASE BOTTOM	1	
		P60001980000	FOOT BASE UP	1	
		P21001320000	AL VERTICAL SUPPORT	1	
		P30T00390000	0.5_SPONGE DOUBLE TAPE_V	2	
		P30T00391000	0.5_SPONGE DOUBLE TAPE_H	4	
		P60001880000	PLASTIC FOOT (GL-6)	6	
		P61500070000	RUBBER PAD_1.5	4	Figure 3 Figure 4
		P237A3231000	SCREW M3*10-WH-BLACK	6	
		P231H12B1000	SCREW M6*10-PH-SW-NI	5	
					Figure 5

6.1.3 Back Cover & Speaker module

Standard operation procedure	Attention	P/N	Description	Quantity	Illustration/ Remark
1、Take off INTERFACE COVER,AV COVER and CONN FIX COVER as Figure 1。 2、Take off STAND MODULE as Figure 2。 3、Take off INTERFACE and TURNER MODULE as Figure 3。 4、Take off SPEAKER MODULE and replace it if necessary as Figure 4。 5、Loosen Screw M4*8-PH x6 , M4*8-FH x4 and M3*8-FH x2 and replace BACK COVER as Figure 5。		P60001890000	BACK COVER	1	 Figure 1 Figure 3 Figure 2 Figure 4 Figure 5
		P231A3240800	SCREW M4*8-PH-BLACK	6	
		P234A3240800	SCREW M4*8-FH-BLACK	4	
		P234A3230800	SCREW M3*8-FH-BLACK	2	

6.1.4 PCBA module

Standard operation procedure	Attention	P/N	Description	Quantity	Illustration/ Remark
1、Take off BACK COVER as Figure 1。		P10W51500002	WIRES(W2701-KP01-650)	1	
2、Loosen Screw M4*10 x5 and take off BACK COVER SUPPORT BRACKET as Figure 2。		P10W53000001	WIRES(W2701-LC01-200)	1	
		P6000800000	WIRE CLIP(TUT-10)	1	
		P10W62600001	WIRES(W2701-PW01-300)	1	
3、Loosen Screw M3*6-WH x6 ,T3*8 x2 and DVI&VGA bolt x4 as Figure 3。		P061P3112010	PCBA PPKA0311 SYSTEM BOARD 6 Layers VER0.1 FOR 30" LCD TV	1	
4、Sliding SYSTEM_PCB_SHIELDING to left as blue arrow direction and take off it as Figure 3。		P061P3112011	PCBA PPKA0311 SYSTEM BOARD 6 Layers VER0.1 FOR 27" LCD TV	1	
		P21001350000	BACK COVER SUPPORT BRACKET	1	
		P21001370000	SYSTEM_PCB_SHIELDING	1	
5、Replace four wire if necessary as Figure 4。		P231F1241000	M4*10-R-W,SW-NI	5	
6、Loosen Screw M3*6 x7 and replace PCBA SYS BOARD as Figure 4。		P237A1230600	SCREW M3*6-WH-NI	6	
		P235A3230800	T3*8-R-BLACK	2	
		P231A1230600	M3*6 -R-NI	7	

6.1.5 Power module

Standard operation procedure	Attention	P/N	Description	Quantity	Illustration/ Remark
1、Take off BACK COVER first。		P21001360000	PWR SHIELDING UP	1	Figure 1
2、Loosen Screw M3*6 x6 and		P16000100000	PWR SUPPLY	1	
take off PWR SHIELDING UP as		P234A3230800	SCREW M3*8-FH-BLACK	2	
Figure 1。		P231A1230600	M3*6-R-NI	6	
3、Loosen Screw M3*6-WH		P237A1230600	M3*6-WH-NI	4	
x4,M3*8 x2 and replace as Figure		P10W62200001	WIRES(W2701-IV01-200)	1	
2。					
4、Replace PWR to INVERTER					
wire if necessary as Figure 2。					
					Figure 2

6.1.6 LCD module

Standard operation procedure	Attention	P/N	Description	Quantity	Illustration/ Remark
1、Loosen Screw M4*10 x12 and replace or take off FRONT COVER ASSY as Figure 1 and Figure 2。 2、Reverse LCD PANEL MODULE as Figure 3。 3、Loosen Screw M4*12 x4 and take off LCD PANEL as Figure 3 and Figure 4。 4、LCD PANEL Screw is different as Figure 5 and Figure 6。		P49000620000	LCD PANEL 27	1	
		P49000610000	LCD PANEL 30	1	
		P21001380000	PCB SUPPORT METAL_27	1	
		P21001390000	PCB SUPPORT METAL_30	1	
		P70403850000	P311 27_FRONT COVER ASSY	1	
		P70403860000	P311 30_FRONT COVER ASSY	1	
		P231F1241000	M4*10-R-W,SW-NI	12	
		P231A3241200	SCREW M4*12-PH-BLACK	4	